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ABSTRACT

This handbook addresses the needs of postsecondary instructors who work with students with learning disabilities. The information in the handbook is gathered from sources throughout Canada and the United States. It is intended to lead instructors toward a greater understanding of the educational needs of students with learning disabilities. The handbook is divided into three sections, followed by a bibliography. Section 1 helps the instructor better understand students with learning disabilities and introduces some of the problems faced by adults with learning disabilites. These problems are illustrated by four case histories. Section 2 provides support suggestions and takes the instructor through the steps of identifying problems and helping students who have learning disabilities cope with postsecondary classes and instructors, and is followed by a five-page bibliography of resources grouped by subject. (KC)

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LEARNING TOGETHER

A HANDBOOK FOR TEACHING ADULTS WITH LEARNING DISABILITIES

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Developed by
Malaspina College
for the
Ministry of Education
Post-Secondary Department
1985

CE 042 783

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PREFACE

In 1983, the Ministry of Education, Continuing Education Branch, initiated the development of a discussion paper on the post-secondary educational opportunities for adults with learning disabilities in British Columbia. This paper identified the services available in provincial post-secondary institutions and collated the relevant information received from educators, administrators, and from adults with learning disabilities. Of particular value was the feedback received from classroom instructors who work with learning disabilities. Based on this feedback, recommendations were formulated as to what could be done to aid classroom instructors and what improvements in levels of service could be made.

In March 1984, the Ministry of Education brought together an Advisory Committee, and work began on the development of this handbook. Special thanks is given to the members of this Advisory Committee for their concern and deep commitment to adults with learning disabilities.

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Linda J. Love
Writer

INTRODUCTION

The goal of this handbook is to address the needs of post-secondary instructors who work with students who have learning disabilities. The information presented here is not new. It is gathered from sources throughout Canada and the United States. What the handbook does is provide instructors with systematic steps they can follow in recognizing and helping the student with learning disabilities. This handbook will thus lead instructors toward a greater understanding of the educational needs of students with learning disabilities.

The information in this handbook is based on sound teaching practices, in the belief that good teaching can help minimize the impact of a learning disability.

The problems of learning for students with multiple handicaps or severe neurological impairments are not addressed. It is recognized that an adult student for whom English is a second language may also have a learning disability. In this case, a distinction should be made between the language difficulty and the learning disability. A diagnostician or psychologist should be consulted.

The services of a diagnostician or psychologist to provide in-depth assessment is an integral part of working with students with severe learning disabilities. This handbook in no way provides an alternative to this valuable service, but will complement a professional assessment.

The handbook is divided into three sections followed by a bibliography. **Section 1, Understanding Students with Learning Disabilities,** helps the instructor better understand students with learning disabilities and introduces some of the problems faced by adults with learning disabilities. These problems are dramatically illustrated by four case histories of adults in B.C. **Section 2, Helping Students with Learning Disabilities,** provides support suggestions and takes the instructor through the steps of identifying problems and helping students who have learning disabilities cope with post-secondary classes and administrative structures. **Section 3, Resources for the Instructor,** provides valuable resource suggestions for instructors and is followed by a comprehensive **Bibliography.**

SECTION 1: UNDERSTANDING STUDENTS WITH LEARNING DISABILITIES

WHAT IS A LEARNING DISABILITY?

Two definitions of learning disabilities are current in British Columbia today; one is a general definition provided by the Canadian Association for Children and Adults with Learning Disabilities (CACLD), and the other is a more specific definition provided by the Ministry of Education. No attempt is made to interpret these definitions or to point out differences or similarities. Both are included here in their entirety.

The B.C. Association for Children and Adults with Learning Disabilities accepts the national definition as presented below:

"Learning disabilities is a generic term that refers to a heterogeneous group of disorders due to identifiable or inferred central nervous system dysfunction. Such disorders may be manifested by delays in early development and/or difficulties in any of the following areas: attention, memory, reasoning, co-ordination, communicating, reading, writing, spelling, calculation, social competence and emotional maturation.

Learning disabilities are intrinsic to the individual, and may affect learning and behaviour in any individual, including those with potentially average, average or above average intelligence.

Learning disabilities are not due primarily to visual, hearing, or motor handicaps; to mental retardation, emotional disturbance, or environmental disadvantage; although they may occur concurrently with any of these.

Learning disabilities may arise from genetic variations, biochemical factors, events in the pre to peri-natal period, or any other subsequent events resulting in neurological impairment."

The Ministry of Education recognizes the severely learning disabled as pertaining to that one to two percent of children in the schools whose hindrances to learning are so severe as to almost totally impede educational instruction by conventional methods.

Learning disabled children have one universal characteristic: in one or more learning areas, performance consistently falls far short of estimated potential.

Given the complex task of defining the learning disabled population and the deficiencies of each of the many definitions currently proposed in the literature, the Ministry of Education defines children with learning disabilities as follows:

"Children with learning disabilities are those who show a significant discrepancy between their estimated learning potential and actual performance. This discrepancy is related to basic problems in attention, perception, symbolization and the understanding or use of spoken or written language. These may be manifested in difficulties in thinking, listening, talking, reading, writing, spelling or computing. These problems may or may not be accompanied by demonstrable central nervous system dysfunctions."

There are many kinds of learning disabilities, and they vary in severity. It is also possible for one person to have more than one specific learning disability. People with learning disabilities constitute 15% of the population (CELDIC Report, 1969). This currently represents 169 500 British Columbian adults between the ages of 20 and 44.

WHO IS THE STUDENT WITH LEARNING DISABILITIES?

Awareness of learning disabilities is a relatively new phenomenon. Until the 1960s, a student with learning disabilities was considered 'the slow learner', 'the under-achiever', 'lazy', or 'the troublemaker' in the educational system. Today, school children identified as having learning disabilities are receiving specialized support, particularly in elementary grades. However, there is a strong possibility that the adult with learning disabilities who left school in or before the 1960s has not been identified as such. Even though some students were so identified, it may have been in another setting (perhaps by a psychologist in private practice), and teachers may not have recognized the need for specialized learning support.

Educators are becoming increasingly aware of the numbers of students who are not progressing academically. Some students are not admitted to programs because they do not meet entrance requirements; but there are more who are admitted and who do not succeed for any apparent or identifiable reason. The student and the instructor are frustrated -- the student because he or she should have done better, needed more help than that received, and often felt alone and isolated in the class; the instructor because the student seemed capable of more, required more help than the instructor was able to give, and because the instructor didn't know how to help the student. The student with learning disabilities often takes the same course two or three times before passing, or simply drops out only to reappear in a similar course. The frustrations increase for everyone concerned.

These individuals with learning disabilities may be our neighbours, spouses of friends, and/or our babysitters. They have learned ways to disguise their disabilities. They "forget" their glasses when a telephone number needs looking up, order the same as someone else in a restaurant because they can't read the menu, have their spouses do all the family bookkeeping and letter writing, and are too busy to help their children with homework. The man who owned a portable cast for his arm and used it whenever he knew he would be faced with filling out forms represents just one example of ingenious but desperate ways in which adults

with learning disabilities hide this handicap. Each person with a learning disability is an individual, and there is no 'profile' that can be drawn to describe everyone with a learning disability. The following stories are those of four British Columbians who have learning disabilities.

Brenda Foster

Brenda always found school difficult but was described by her teachers as a nice girl, willing and helpful. She was quiet, easy-going and liked by both her teachers and fellow students. She was involved in sports teams as a helper, and was considered dependable and responsible. Although her grades were never more than a low average, she was promoted each year. When math became impossible she dropped it and graduated from Grade 12 with a modified math course. Brenda describes her high school years as "struggling".

After graduation Brenda enrolled in a hairdressing program and when she had to drop out before completion, the reason was explained as an allergy to the dyes. Three years of stop gap employment followed until at 23 Brenda enrolled in a Early Childhood and Education Care Program. Because Grade 12 was the prerequisite, no entry level testing was necessary.

At the end of the first semester problems began to be evident. Written assignments were poorly organized with bizarre spelling and unusual sentence structure. Brenda had difficulty with written expression. She was unable to follow through on assignments and when reviewing or studying did not seem able to retrieve answers from texts. However, on practicum placements, Brenda received the highest marks in the class. Because her instructors felt Brenda was a hard worker and would make an excellent daycare worker, a referral was make for testing.

The testing showed that Brenda had difficulty in all areas involving memory and that this deficit area was the reason for her poor organization skills, written expression and study skills. All aspects of her course work were affected.

Because of the commitment the instructors felt to seeing Brenda succeed, an evaluation of the job was undertaken relating to the need for memory. Cues were developed for safety practices and daily routines. A plan was developed to build on Brenda's strengths that would allow her to take fewer courses, extending the time to complete the program in an additional year. Brenda was allowed to take multiple choice tests and exams were given orally whenever possible to test her knowledge of course materials.

Brenda was successful in completing the Early Childhood Education and Care Program and is now employed in a daycare setting. The adaptations made to ensure Brenda's success did not give her an unfair advantage but gave her instead a chance to compete equally with her peers.

Jim Wosk

Jim Wosk is forty-seven years old, is married with two children, and lives in a beautiful suburban house. He is a custom metal worker who has his Class One certification from a British Columbia vocational institute. Jim has always been interested in astronomy and spends every clear night in the backyard with his telescope. He also enjoys working with anything mechanical -- repairing appliances, cars, lawnmowers, or any other mechanical device in his spare time. He attended school in eastern Canada where he spent three out of seven years in a class for the mentally handicapped. His mother tried unsuccessfully to help Jim with his school work.

He remembers being told in school, after some testing had been done, that he had a 'lazy brain' and that with time it would become more active. After this testing, he was removed from the handicapped class and put back into regular classes. Jim explains, "It was terrible, day after day, doing nothing with the retarded kids; but it was worse back in the regular class. I couldn't do anything at all; so as soon as I could, I left school". When he did so at age thirteen, he could not write his name, didn't know his address, and could read nothing. Yet being a highly motivated individual, he found a job and went to work immediately.

He came to night school the week after he had written and passed a 250-question exam required for the Class One qualification certificate mentioned earlier. He passed this exam by having his wife read the 50-page manual into a tape recorder. Night after night he followed in the book while listening to the tape. He found this situation so anxiety producing that he finally decided to try, once more, to upgrade academically.

A quiet, shy man, he entered an ABE program with a great deal of apprehension. He recalls that his wife, who had also tried many times to help, drove him to school: she was afraid he wouldn't get there and literally pushed him into the classroom. He said the smell of chalk dust the first night made him feel sick to his stomach. Painful failure experiences are never quite forgotten.

When given an informal battery of tests at the ABE class, Jim was found to have a 2.4 grade reading level and 1.2 spelling level. In the last year he has reached approximately a Grade 5 level. He worked with a tutor for four months before joining the class and feels for the first time that he is actually experiencing some academic success.

His newly gained confidence is obvious when he says, "My kids didn't know I had a problem, (my wife just told them I was too busy to help them with homework), my neighbours or the men I work with didn't know and now I tell everybody about school. I've got my Class One certificate hanging over the fireplace in the family room and, by the way, I read the whole front page of the newspaper last weekend. My only big regret is that I couldn't go to college or university. With the right kind of help, I'd be teaching those vocational courses instead of attending them."

Patricia Henderson

Patricia Henderson started school in Richmond in 1949. By the age of 12 she was extremely frustrated and unhappy as she had made little progress in the school system. Her father apparently met with little resistance when he told the Richmond superintendent that he was taking his daughter out of school.

Despite her illiteracy, when Patricia was 15 she found a job with a Vancouver clothing manufacturer. Eventually she decided to take a hairdressing course, and with her mother's help, she memorized the final exam and obtained her hairdressing license. She found, however, that she could not get work in a hairdressing salon: because of her inability to write down names and phone numbers, she could not book appointments. To overcome this problem, she opened her own shop and now manages to book appointments by memory.

Despite Patricia's success in owning her own business, house, and recreational property and being the single parent of two well-adjusted daughters, she has always felt grossly inadequate, not being able to read and write.

Three years ago Patricia decided to make enquiries regarding Adult Basic Education courses. She phoned a school board and a college in her area but they offered nothing at the beginning level. An institution with an appropriate program - an hour's drive away - was recommended. There, an instructor suggested that she first have an educational assessment to find out her strengths and weaknesses. Patricia found her own assessment facility and paid $350.00, only to be told that she should not attempt written work but should use a tape recorder to record the information she needed. She felt this assessment had been an exercise in futility.

She persevered, however, and enrolled in the program. Unfortunately, the night that Patricia came to class for testing and placement, she met someone she knew. She left immediately, for she had told no one of her educational problems and was determined that no one would find out. Patricia explored other program possibilities and eventually enrolled in another program, even further from home. Arrangements were made for her to work alone in a bookroom with a tutor because she felt extremely threatened in a group. She was not about to run the risk again of meeting someone she knew. At the end of the semester, a summer tutoring program was suggested for her. Possible future plans were discussed, and Patricia felt she wanted no more testing and would try once more to enter a night school program. Patricia remained very hesitant about being placed in a group, and it was agreed that she would work with another student and a volunteer. In this situation, without group pressure, she continued to improve her literacy

skills. After repeating each of the three literacy levels twice, Patricia is now moving into a Grade 8 equivalency program. In this program, many of the students with learning disabilities "fall apart" because they are unable to independently write proper paragraphs, use correct grammar, or follow through with critical reading assignments.

Patricia has coped well in society despite her learning disabilities, and it is only problems with her self-esteem that prevent her from seeing her success. Without support, however, it is unlikely she will be able to achieve her educational goals.

David Wilson

David left school after Grade ten because he felt he was getting nowhere. He went to work in a pulp mill at the age of 17 and during the next ten years worked in a variety of positions within the mill. Because he was a hard worker, well-liked by his employer and co-workers and ambitious, he was promoted to a foreman's position. He took an interest in safety and was responsible for improvements in safety practices. David's leadership qualities and initiatives on the job brought him to the attention of management who was quick to recognize his potential. In his own words he was the new "Golden Boy".

With encouragement and support from his supervisors, David took a paid leave of absence and was accepted in a Business Administration program at a community college.

As a mature student with 10 years in the work force, David was an asset to his class. He participated with enthusiasm and led discussions and debates. His essays and research papers received high marks and his future looked bright. However, David soon discovered that in any course involving mathematics, he was in real difficulty. In junior high school he had never found math easy but now it was impossible. He had not mastered anything above simple four function math and Accounting and Business Math were beyond his comprehension. He had no ability to do mental calculations or to understand complex mathematical problems. David fell further and further behind. He employed a tutor but he was unable to work at the level required in his courses.

At the time of the interview, David had sought help from the Adult Basic Education Department, Learning Resource Centre, but it was already too late to catch up and he was considering dropping out. He had lost his year in the program and would need to work intensively with a diagnostician and tutor to learn to compensate for his disability. Even if he could improve his math skills, no one could assure his success if he enrolled again.

David felt he had let everyone down. He didn't know how to tell his employer, family or friends that he had failed.

SECTION 2: HELPING STUDENTS WITH LEARNING DISABILITIES

SUPPORT SERVICES

What support services are currently available within the post-secondary educational system to identify and help students with learning disabilities? In British Columbia, there are varying levels of service available, ranging from comprehensive programs to no programs at all in some institutions. In an attempt to assess the levels of service and recommend changes in the provision of services, the Ministry of Education has published a Discussion Paper, A Design for Learning for Adults with Learning Disabilities, (1984). This paper recommends that three levels of service be made available throughout the province. (The service model from this paper is included in this document as Resource A, Section 3, Design for Learning.)

In the elementary and secondary educational system, many students thought to have learning disabilities are diagnosed and an individual educational plan is developed. These students receive learning assistance and support through specialized services and classes. In the post-secondary system, however, diagnostic services to identify learning disabilities may not be available within the institution. When arranged with an outside agency, a diagnosis will not necessarily identify the means by which a student can be helped in the classroom. Even if an adult student is identified as having learning disabilities, progress within the post-secondary system cannot be assured. Additional support may be required and at least must be considered. The following support suggestions, if implemented, will help learning disabled students begin to progress more smoothly through the system.

Admissions Assistance: Students with learning disabilities often have problems with admission procedures at post-secondary institutions. They may not be able to fill out the application form, read admission requirements, or pass written entrance tests. Awareness on the part of admissions and counselling staff of the problems facing students with learning disabilities will help to alleviate these difficulties.

Orientation and Scheduling: Some students with learning disabilities may have difficulty finding classrooms or reading timetables. Setting aside time in advance of actual participation in the program would be helpful in orienting those students to the institution and its procedures. If a student requires tutors or study sessions to assist with coursework, the time for remedial work should be scheduled within the student's timetable.

Variation of Standard Materials: Some learning disabled students may require taped texts, modified material, or supplementary material. Assessing the learning material needs of these students before they begin a program will allow the instructor to obtain items that vary from standard instructional material.

Examination, Test, and Course Requirement Modifications: Often a student with learning disabilities will require additional time to complete course requirements, tests, and/or examinations. A modified format for delivery of examinations and tests could be considered for some students (oral testing is one possible alternative). As well, course requirements could be modified so that learning disabled students could use a self-paced approach to meet course completion requirements.

Peer Support and Counselling: Peer support groups provide opportunities for students with learning disabilities to share experiences and frustrations. These groups can provide emotional as well as study skill support, and students should be encouraged to form such groups and help each other. Counsellors too need to be aware of the problems that face students with learning disabilities and need to be available to deal with problems of stress and social interaction, and to help identify realistic career goals. This support can be vital in preventing a student from withdrawing from a program.

Tutors/Study Groups: Many students with learning disabilities do not have appropriate study skills, organizational or time management skills. The ability to read and review texts, organize assignments and monitor and correct written work needs to be developed. A study skills program and tutorial help can help students with learning disabilities deal with many of these problem areas.

Co-ordination of Services: Co-ordination of all services for students with learning disabilities is essential in providing a successful learning experience. Students need to know what services are available and how these services can help with the problems they encounter. Co-ordination ensures that students with learning disabilities know about the help available and how they can go about obtaining these services.

But what is the specific role of the classroom instructor in relation to these support services? Since the instructor is the person most likely to be involved with the learning disabled student, the instructor too needs to know where to turn for help. The following list may help direct the instructor.

*Seek support from the administration in locating services for students with learning disabilities.

*Check within the institution for a service designed for students with learning disabilities or learning problems. Those involved may know of community agencies that can offer support (e.g., Local Associations for Children and Adults with Learning Disabilities, school boards that provide special programs in secondary schools, or government agencies including the Ministry of Labour and Canada Employment Centres).

*Seek support and help from other departments and divisions within your institution (e.g., Learning Assistance, Reading and Study Skills, Adult Basic Education, Counselling, Adult Special Education) and/or other instructors who may have learning disability backgrounds or expertise.

*Seek help and ideas from colleagues in other institutions.

FIVE STEPS IN HELPING THE STUDENT WITH LEARNING DISABILITIES

How does an instructor recognize the signs of a learning disability? How does an instructor evaluate the student's disability or strengths? What classroom strategies facilitate learning for the student with learning disabilities? And most importantly, how do the instructor and learning disabled student become effective partners in education?

The following five steps can be used by classroom instructors to develop skills and strategies for identifying and helping students with learning disabilities so that these students can have a positive educational experience.

1. Identifying the Student with Possible Learning Disabilities
2. Observing the Patterns of Learning Disabilities
3. Evaluating Student Strengths and Weaknesses
4. Developing Alternative Strategies and Techniques
5. Monitoring and Revising

1. Identifying the Student with Possible Learning Disabilities

Each student in the classroom has certain traits that are peculiar to that individual. Certain characteristics or combination of characteristics have been found to be evident in students with learning disabilities.

To better understand what these signs are and how they relate to the difficulties encountered by the student with learning disabilities, it is important to remember that 3 steps are involved in all human learning: <u>input</u> of information, <u>process</u> of information and <u>output</u>. For the student with learning disabilities there is a breakdown at one, two or all three of these steps.

At the <u>input</u> stage:

- very limited information may be taken in at one time.
- there may be a high level of distractability or short attention span resulting in lost and/or inaccurate information.

- one or more of the 5 senses or modalities of learning may be impaired in the ability to receive information.
- there may be difficulties receiving information from more than one modality or sense, at any one time.

In the process stage:

- it may be difficult to organize or put information in order, causing this information to be confused or jumbled.
- there may be difficulty integrating old knowledge with new learning.
- short or long term memory may be limited so that information is forgotten.
- it may be difficult to transfer or associate information learned visually with that learned auditorally or vice a versa.
- there may be difficulty in language encoding and decoding.

In the output stage:

- there may be difficulty expressing in written form, knowledge that is understood or known verbally.
- there may be difficulty in performing tasks even though the knowledge is present.
- there may be difficulty expressing verbally knowledge that can be applied in a shop or lab setting.*

How these characteristics affect the student in the classroom is indicated in Resource B, Section 3, Learning Disability Identfication Guide. In Resource F, Section 3, Visual and Auditory Behavioral Checklist and Compensatory Tactics lists additional behaviours that are recognizable in the classroom.

*Adapted from: College Education for the Learning Disabled; Robert J. MacDonald, Fanshawe College, London, Ontario, 1984.

Social Skills

Adults with learning disabilities may also have social problems due to their perceptual problems. For the same reason that a person with visual perceptual problems may have trouble discriminating between the letters "b" and "d", the learning disabled person may be unable to detect the difference between a joking wink and a disgusted glance. People with auditory perceptual problems might not notice the difference between sincere and sarcastic comments or be able to recognize other subtle changes in tone of voice. These difficulties in interpreting nonverbal messages may result in lowered self-esteem for some learning disabled adults and may cause them to have trouble meeting people, working co-operatively with others, or making friends.

2. Observing the Patterns of Learning Disability

It is important to remember that a student who displays one or more characteristics of a learning disability is not necessarily learning disabled. However, if one or more of these characteristics are consistently observed in a student experiencing difficulty, it may be helpful to use a checklist to reinforce your observations of these characteristics. One such checklist, developed by Weiss and Weiss, is included as Resource C, Section 3, Learning Disability Assessment Checklist for Teachers. It enables instructors to gain insight into possible problem areas and helps them recognize potential learning difficulties. If the observations of the student's behaviours often fall in the "occasional" to "frequent" categories, further evaluation is indicated.

Discussing Your Observations with the Student

If a student's problems consistently follow learning disability patterns, one of the most important things an instructor can do is to sit down and talk to the student. Observations should be discussed with the student ("When you write you seem to leave out some letters and reverse others.") and responses to these observations should be encouraged.

Previous schooling experiences, difficulties that have been encountered, and feelings about school are important indicators of difficulties. Information sought should include:

- how the student learns most easily,
- what are the student's strengths and weaknesses in learning,
- in what environment and circumstances the student feels most comfortable learning,
- how the student has compensated in the past for difficulties encountered in learning,
- what types of learning are most difficult for the student,
- what the student likes and dislikes doing in the way of other activities (e.g., hobbies),
- what helps the student the most.

The student needs to feel comfortable discussing frustrations and needs to know that these frustrations will be understood.

Keeping the student involved at all times will ensure continued participation and co-operation in the learning process and will also help him or her to see the process as something that is being done co-operatively and not as something that treats the student as a passive agent. If, after discussion with the student, there are indications of problems that confirm observations, the student's permission should be requested before proceeding any further.

3. Evaluating Student Strengths and Weaknesses

Once an instructor has identified a possible learning disability and observed the patterns of its manifestation, it is important to evaluate strengths and weaknesses. Evaluation gives a better understanding of the problems and specific strengths a student may have. The strengths can be reinforced and used to overcome weaknesses.

It may prove helpful to give all students in the classroom a test of learning modality. The evaluation of this test will give an instructor a better understanding of the individual differences in learning styles of all students and help identify students experiencing difficulty. Everyone learns by visual, auditory, or kinesthetic means, and it can be helpful for students to find and understand their natural ways of learning. Included in Section 3, Resource D, Learning Modality Test, and Resource E, What is Your Learning Style?, are informal screens that can be administered and evaluated in the classroom. Although the former is designed for vocational students, it can easily be adapted for use in any classroom. What is Your Learning Style? is a checklist for the student and gives an awareness of learning style or modality. It provides information that enables the student to begin recognizing strengths and weaknesses.

It is important to remember that evaluation is not the administration of a single test, or test battery, but an ongoing process that involves observation, assessment, planning, and change. Ideally, every educational institution would have a service to begin this process, providing diagnostic and prescriptive testing. However, in many cases the instructor will be the only resource available to help the student. The informal screening that an instructor carries out is not meant to replace the work done by learning diagnosticians or psychologists, but if the service of these professionals is not readily accessible, it is important to act quickly to help the student. The longer the delay, the more likely it is that the student will fall behind and/or drop out.

Whenever possible the services of a professional should be used to provide an in-depth assessment that is educationally based and relevant to the students' course of studies. The instructor has an important role in interpreting results for the student and implementing recommendations.

It is important that any findings or test results be discussed with the student immediately. (Evaluation should be something done with a student, not something done to a student.) By taking away the mystery and secrecy often associated with testing situations, the student begins to feel part of the process, being both informed and involved. An overview should be developed and assurances given that there is no pass or fail, good or bad, right or wrong in the results. Terms should be general rather than technical in describing the student's learning style, strengths and weaknesses. Encourage the student to identify and respond to areas of difficulty, and remember to be honest. More importantly, remember to be tactful. Be sure the student understands that this process is intended to help provide information for the instructor in planning for a successful learning experience.

The student should be assured that the information discussed is confidential, but that findings would be helpful to other instructors. Encourage the student to discuss findings with other instructors. Be open about what can be done to help. Ask that the student also be open about what is needed and what is helpful.

4. Developing Alternative Strategies and Techniques

Instructors can develop and incorporate into their instruction alternative strategies and techniques that help students with learning disabilities respond to weaknesses and problems. Unfortunately, most instructors do not have the time to provide one-to-one instruction, extra study sessions, and/or intense remediation for one or two students. When these services are not available in the institution, more generalized strategies can be employed in the classroom:

*Provide students with a detailed course syllabus. If possible, make it available before the course begins.

*Clearly spell out expectations before the course begins (e.g., grading criteria, material to be covered, project deadlines).

*Start each lecture with an outline of material to be covered during that period. At the conclusion of class, briefly summarize key points.

*Speak directly to students, and use gestures and natural expressions to convey further meaning.

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*Speak directly to students, and use gestures and natural expressions to convey further meaning.

*Write new or technical vocabulary on the blackboard, or use a student handout. Terms should be used in context to convey greater meaning.

*Give assignments both orally and in written form to avoid confusion.

*Announce reading assignments well in advance.

*Allow students to tape lectures as a substitute for notetaking.

*For examinations, provide study questions that demonstrate the format as well as the content.

*If necessary, allow students with learning disabilities alternate opportunities to demonstrate mastery of course material (e.g., give tests with extended time limits; oral, taped, or individually supervised examinations in a separate room).

*Permit the use of simple calculators, scratch paper, and spellers' dictionaries during examinations.

*Provide adequate opportunities for question-and-answer sessions and review sessions.

*If possible, select textbooks with accompanying study guides for optional student use.

*Vary the ways to give directions
- oral, direct from instructor or recorded on tape
- written on paper, blackboard or overhead projector
- demonstrate what is being done.

*Ask for periodic status reports with long term assignments.

*Teach students to use textbook sections; glossary, index, table of contents, introductions, summaries and graphics.

*Provide and teach memory tricks (mnemonics).

*Teach the student to proofread assignments and tests.

*Teach and encourage the student to use all learning modalities (visual, auditory and motor-notetaking from lectures).

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*Encourage students to use campus support services (e.g., pre-registration, assistance in ordering taped textbooks, alternative testing arrangements, specialized study aids, peer support groups, diagnostic consultation, development training, academic tutorial assistance).

The preceding general strategies can help all students in a class, including those with learning disabilities. However, it is also possible to use very specialized techniques, particularly in basic skills programs. These techniques are based on a knowledge of learning styles, modalities, and strengths and weaknesses.

Visual and Auditory Behavioral Checklist and Compensatory Tactics, which is included in Section 3, Resource F, outlines teaching strategies for Language Arts, Math, and Reading Comprehension. These strategies are based on the identification of specific learning styles. A list of material and publishers is also included for use in Basic Skills programs. This resource identifies behaviours and suggests specific compensations that can be used with the student with learning disabilities.

Resource G, Section 3, Techniques and Strategies for Teaching Learning Disabled Students and Resource H, Instructing Learning Disabled Students give additional techniques that are used in vocational programs but are applicable to all teaching stiuations. These techniques encourage the student with learning disabilities to build on strengths as well as organizational and study skills.

Research in the area of learning disabilities is ongoing throughout Canada and the United States. Many post-secondary institutions have found that students with learning disabilities benefit from programs that teach alternate learning strategies or ways to compensate more than they do from remediation-oriented programs.

5. Monitoring and Revising

The work has begun and the student and instructor are pleased with what is happening in the classroom. What now? It's not time to sit back and pat each other on the back yet. What works at one stage of the process may not work at the next. The student is the best source of information as to what is working or not working. As the instructor continues to observe and work with the student, changes occur in learning; therefore, changes must occur in teaching. Be aware of frustration levels, learning "blocks," and loss of interest or motivation. Talk to the student, make changes -- don't be afraid to throw one idea out and try another.

Reinforce the idea that instructor and student are partners in the educational process and need to collaborate, be flexible, open, and honest about what is happening in the classroom. Unless this is an equal relationship, change will fail to be positive. Use resources provided to make quick ongoing checks. Be open to change. Observe, review, and revise. Adapting material to meet the needs of the individual students thus becomes possible, and instruction can become more effective.

The techniques and strategies recommended will involve more work for both the instructor and the student. Keeping the student involved and informed ensures that the student is an integral part of the process and will assume responsibility for the commitment required. Encourage the student to involve friends or family in helping with extra work. Adult learners need to be self-directed and must be the prime participants in this process.

By building on the strengths of the student rather than focusing on the problems or weaknesses, progress is possible. Adults with learning disabilities have often seen education as a negative experience because of their repeated failures. It will take them a while to accept the reassurance that this time the experience can be a positive one.

SECTION 3: RESOURCES
A TO H

RESOURCE A

The following resource

Design for Learning

is taken from

"A Design for Learning for Adults with Learning Disabilities"

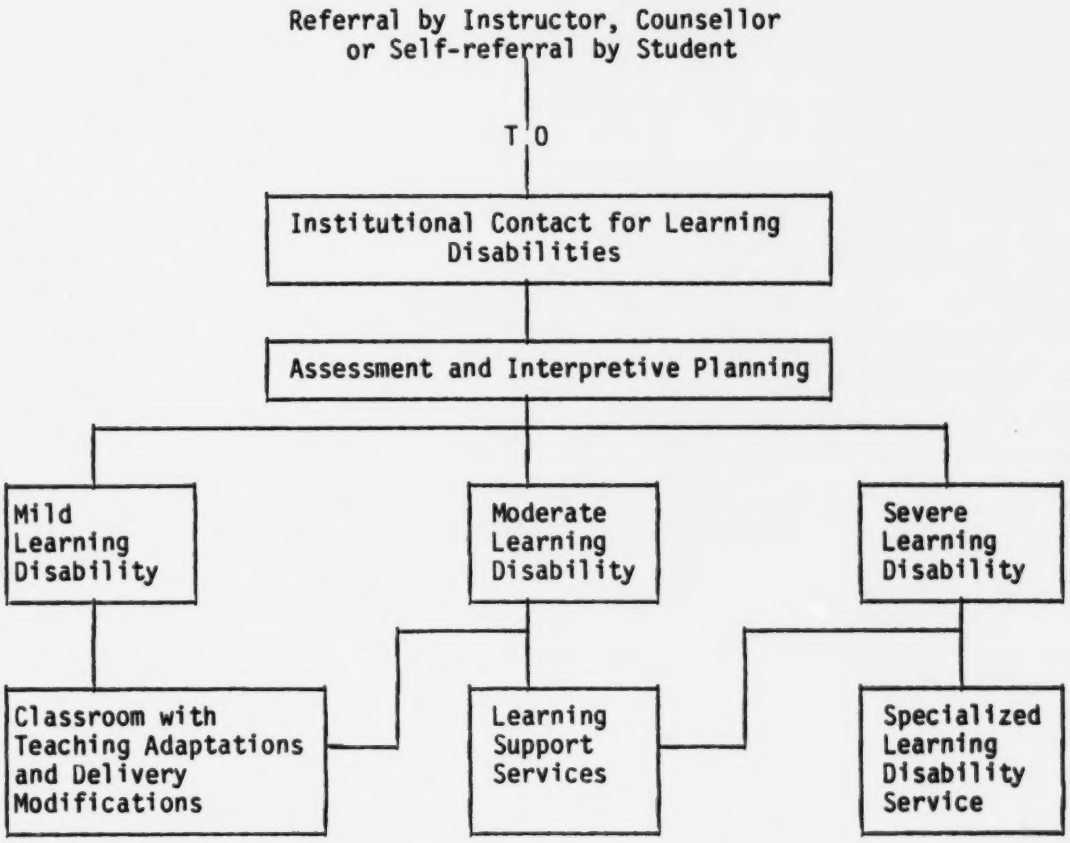
Discussion Paper 01/84

Province of British Columbia

Ministry of Education

1984

DESIGN FOR LEARNING



Assisting Adults To Become Self-Directed Learners

It is evident from the literature and from experience in British Columbia that a primary need of adult learners is to become independent, self-directed learners. Some adults need more support than others to satisfy this need.

It is equally evident that this support should be provided for as brief a time as required, and should isolate the learner only to the extent required.

The goal, then, of any design for learning for adults with learning disabilities should be to provide the appropriate level and kinds of support, for the required period of time, and as close as possible to regular learning circumstances.

Stated otherwise, all adults with any degree of learning disability should be assisted to become independent rather than dependent, in an environment as close as possible to the mainstream. How quickly that goal can be achieved will depend upon the particular needs of each adult learner.

Criteria For A Design For Learning

An adequate and equitable plan for educational opportunities for adults with learning disabilities will meet the following standards:

1. It will allow for articulation of support among various levels of the educational system, from pre-school through post-secondary and higher education.

2. It will provide for support to students regardless of where in the province they might live and learn.

3. It will help all students to identify their own learning strengths and potential as well as difficulties, problems or disabilities so that each person may develop a positive, realistic self-concept.

4. It will organize support resources to meet the particular learning needs of each individual student.

5. It will foster independent and collaborative/peer learning, as much as possible within the mainstream of education, principally the regular classroom.

Organization of Services

A three-level design for learning is required. The chart below illustrates the three levels of support and their relative importance for mild, moderate, and sever severe types of learning disability, respectively. The support service envisaged at each level of the design is then described.

DESIGN FOR LEARNING: THREE LEVELS OF SUPPORT

Type of Disability	Level One Classroom Support		Level Two Institutional Support		Level Three Regional Services
Mild	_____	+	----------	+	.....
Moderate	_____	+	_____	+	----------
Severe	.....	+	_____	+	_____

_____ Major Source of Support

------ Secondary Source of Support

..... Minor Source of Support

Level One - Classroom Support
Recognition Adaptation Referral Support

All instructors working with adult students first need to learn how to recognize students with potential learning disabilities. In most cases of mild disability, the only other demand on the classroom instructor is the willingness to adapt course requirements to the student - to accept oral rather than written reports, to allow tape recorders, note takers, taped books, and longer periods of time for exams, assignments and course completions. Classroom instructors should receive every encouragement to utilize the Provincial Post-Secondary Resource Centre for assistance. All classroom instructors will encounter students who need additional, more specialized support. In these instances, the classroom instructor should refer the student to appropriate support staff on campus and then continue to work with the student in the regular classroom as part of a larger resource "team".

Level Two - Institutional Support
Identification and Referral Assessment and Diagnosis Prescription Remediation and Compensation Monitoring Follow Up Coordination and Articulation Co-operative Planning

Each institution and major campus should provide specialized support services for adults with learning disabilities, normally within an identified and well-publicized centre.

Trained staff in each centre should have the resources to provide a broad range of services for adults with mild or moderate learning disabilities: identification of learning disabilities, assessment and diagnosis, prescription of remedial and compensatory programs, monitoring of programs in progress, follow up of students after completion of prescribed programs, co-ordination and articulation within and among institutions, and co-operative planning with classroom instructors. Educational, career, employment, and personal counselling will also be necessary for adults with learning disabilities, but not necessarily within a distinct support services centre.

These support services require fully qualified, trained personnel. Continued involvement of the classroom instructor in co-operation with the specialist is equally critical to a successful support program.

Level Three - Regional Services
Diagnosis and Prescription Extended Individual Attention Follow Up

Adults with severe or complex learning disabilities, although few in number, require specialized services, individual attention for extended periods of time and trained personnel, including a diagnostician and trained tutors. Diagnostic and prescriptive services are essential components of the design for learning.

While the incidence of severe learning disabilities is not extensive, the quality of service required is of critical importance. At this stage in the evolution of service for adults with learning disabilities, specialized services for adults with learning disabilities should become accessible in every college region of the province within three years.

RESOURCE B

The following resource

Learning Disability Identification Guide

is taken from

"Puzzled About Educating Special Needs Students?"

and has been reprinted with permission of

Wisconsin Vocational Studies Center
University of Wisconsin - Madison

1980

LEARNING DISABILITY IDENTIFICATION GUIDE

Poor Visual Perception Functioning

1. Student consistently reverses letters and words, either in reading or writing.
2. Has difficulty in written expression
3. Penmanship is poor
4. Unable to copy correctly from a book or the blackboard
5. Cannot follow written directions
6. Poorly organized written work

Poor Auditory Perceptual Functioning

1. Cannot follow oral directions
2. Cannot tell a story in proper sequence
3. Student has difficulty in orally expressing ideas which he or she seems to understand
4. Student is inattentive during oral presentation of class work
5. Written expression is better than oral expression
6. Comprehension of oral language is poor

Marked Memory Problems

High distractibility, poor attention or general inability to carry out directions independently

1. Student has a short attention span
2. There is repeated failure, on a day-to-day basis, to recall what has been taught

Activity levels hyper-hypo which seriously interfere with educational progress

1. Student may become silly or angry more often or more violently than other students in the classroom
2. Student may become more passive, daydream or withdraw

RESOURCE C

The following resource

Learning Disability Assessment Checklist for Teachers

is taken from

"Puzzled about Educating Special Needs Students?"

and has been reprinted with permission of

Wisconsin Vocational Studies Center
University of Wisconsin, Madison

1980

LEARNING DISABILITY ASSESSMENT CHECKLIST FOR TEACHERS

Reading	Not at All	Occasionally	Frequently
1. Reading is mechanical, without expression			
2. Guesses words based upon a few letters (the first, last letters)			
3. Reads unevenly			
4. Reads past mistakes without attempting to correct errors regardless of meaning			
5. Reads very slowly, sounding out words while reading			
6. Repeats words, loses place, goes back to find place			
7. Unable to blend sounds together to get words			
8. Moves lips during silent reading (subvocalizes)			
9. Does not seem to understand what he or she has read, despite ability to read fluently			
10. Comprehends what is read to him or her better than what he or she reads by self			
11. Does not read willingly			
Writing			
1. Does not organize ideas into meaningful paragraphs			
2. Punctuates incorrectly			
3. Does not write complete sentences			
4. Reverses letters in a sentence; e.g., calm-clam; girl-gril; dirt-drit; saw-was			

	Not at All	Occasionally	Frequently
5. Spells phonetically and writes nonphonetic words incorrectly; e.g. thier, howse, eaite, etc.	_____	_____	_____
6. Erases, crosses out, messes up work with scribbling when making corrections in written work	_____	_____	_____
7. Does not write within lines on paper or indent paragraphs; follows incorrect form for writing	_____	_____	_____
8. Written work deteriorates when under pressure of time testing or when work is long or demanding	_____	_____	_____
9. Work shows poor placement on a page. Work (especially math or drawings) is spaced erratically on the paper	_____	_____	_____
10. Avoids written work though highly verbal in class	_____	_____	_____
11. Oral performance far exceeds written work	_____	_____	_____

Speaking

1. Does not articulate clearly and understandably	_____	_____	_____
2. Does not pronounce ending sounds in words correctly	_____	_____	_____
3. Has tendency to confuse words he or she hears: 'profane' becomes 'propane', 'animal' becomes 'aminal', 'very' becomes 'revy'	_____	_____	_____
4. Speaks quickly and nervously; thus is hard to follow or understand at times	_____	_____	_____
5. Answers questions tangentially and has difficulty in getting to the point	_____	_____	_____
6. Has difficulty finding the correct words when speaking	_____	_____	_____

	Not at All	Occasionally	Frequently
7. Interrupts self when speaking; distracts self and changes the subject; is fragmented and disorganized	_____	_____	_____

Listening

1. Does not seem to listen to instructions	_____	_____	_____
2. Does not attend to what is happening in class	_____	_____	_____
3. Seems to misunderstand language	_____	_____	_____

Math

1. Does not understand place value of numbers	_____	_____	_____
2. Has difficulty in spatial concepts and measurement	_____	_____	_____
3. Does not understand borrowing and carrying in math	_____	_____	_____
4. Cannot remember math facts (addition and multiplication) and cannot recall them automatically	_____	_____	_____
5. Has difficulty with math problems that are written out in sentence form	_____	_____	_____

Attitude

1. Does the student follow through on assigned work, or become disorganized and fail to complete assignments?	_____	_____	_____
2. Does the learner often appear lethargic or apathetic, yawn, appear bored and without energy?	_____	_____	_____
3. Does the student seem to feel inadequate or negative, and put self down?	_____	_____	_____
4. Does he or she tend to be a loner?	_____	_____	_____

	Not at All	Occasionally	Frequently
5. Does the student handle frustration by acting out agressively?	_____	_____	_____
6. Does the learner shy away from anything new academically, socially, athletically, for fear of failure?	_____	_____	_____
7. Does the student have a shorter attention span than most of his or her peers?	_____	_____	_____
8. Does the student claim not to need help? Avoid coming for help after school or during tutorials, for fear of appearing "stupid" or a "dummy"?	_____	_____	_____

Adapted from Weiss, Helen Ginandes and Weiss, Martin, S. A Survival Manual; Case Studies and Suggestions for the Learning Disabled Teenager. Great Barington, Massachusetts, Treehouse Associates, 1976, pp. 68-71.

RESOURCE D

The following resource

Learning Modality Test

is taken from

"Puzzled about Educating Special Needs Students?"

and has been reprinted with permission of

Wisconsin Vocational Studies Center
University of Wisconsin, Madison

1980

LEARNING MODALITY TEST

Nearly all persons learn by visual, auditory or kinesthetic means. It is important to know how an individual learns in order to prepare teaching material and techniques for classroom or shop use. Baxter (1975) developed a test which has been used successfully as an informal way of identifying learning modes. An adaptation of the test for vocational students has been developed and is found on the following pages.

Tests For Three Types Of Learning

Test Ground Rules

To give the test, you need:

1. A group of not more than 15 students as it is difficult to observe more than that at one time.

2. A list of the students' names which you can mark as you observe their reactions.

   V = Visual Learner
   A = Audio Learner
   K = Kinesthetic Learner

Reactions to watch for:

Visual Learners will usually close their eyes or look at the ceiling as they try to recall a visual picture.

Audio Learners will move their lips or whisper as they try to memorize.

Kinesthetic Learners will use their fingers to count off items or write in the air.

Conducting The Test

Start by telling your students that you are going to give them a test to determine what kind of learners they are: VISUAL, AUDIO, or KINESTHETIC.

This test consists of pretending that the students are going to the toolroom to get some tools for you. First, you will write the list on the board, allowing the students to watch you, but they must not copy it. Next, you will give them the list orally. You will not write it and neither must they. Then, you will dictate the list to them orally and they will write it down.

After each presentation, you will ask your students to repeat the list to you if they wish. If a student is not able to repeat the list, tell him or her not to worry. The response to your request should be voluntary and the list does not have to be given back in order.

Note: The most predominant characteristic is used as a symptom.

The specific test or tests in which the student has the highest recall is a reinforcement of his native way of learning. However, the symptoms are the prime indication.

List

Hammer	Level	Pliers	Battery Tester
Crescent	Wrench	Square	Screwdriver
Welding Rods			

First Presentation

1. Write the list on the board while the students are watching. Do not let them write.

2. Allow students to view the list for approximately one minute while observing their reactions. Mark the symptoms after the students' names.

   Symptoms:

   VISUAL LEARNERS - Close their eyes or look at the ceiling. (V after name)

   AUDIO LEARNERS - Move their lips or whisper. (A after name)

   KINESTHETIC LEARNERS - Count the items on their fingers or write in the air. (K after name)

3. Erase the list.

4. Ask, "Who would like to repeat the items to me?"

5. Observe that the Visual Learners will volunteer first.

6. Call on them to recite ORALLY, one at a time. (Note that after a few students have recited, a few more timid hands will go up. These usually are AUDIO LEARNERS who have learned the list, not from seeing it, but from hearing the other students say the items.)

7. As you notice a student's symptoms, make "V", "A" or "K" after the student's name.

List

Tape Measure	Hammer	Screwdriver	Level
Chalk Line	Pliers	Vise Grip	Paint Brush

Second Presentation

1. Dictate the list ORALLY (no writing by either teacher or students). Repeat the dictation a second time, pausing for a moment after each item.

2. OBSERVE that the VISUAL LEARNERS will close their eyes to try to SEE the items. The AUDIO LEARNERS will whisper each item as you dictate it. The KINESTHETIC LEARNERS will use their hands to mark off the number of items or will write in the air.

3. Ask, "Who would like to repeat the list?"

4. The AUDIO LEARNERS will be the most eager to respond, although other students will try to repeat the items you have dictated.

5. Make appropriate notation of "V", "A" or "K" after the students' names as you notice their reactions.

List

Chalk Line	Power Drill	Plumb Bob	Welding Rods
Hand Saw	Square	Tape Measure	Pliers

Third Presentation

1. Tell the students to have pencil and paper ready to WRITE the list as you dictate it ORALLY. Tell them you will not count spelling. In fact, spell the words as you dictate.

2. After you have finished dictating the list, tell the students to rewrite the list, and to look at the one they have written from you dictation.

3. When they have finished rewriting the list, tell them to turn the paper over and WRITE THE LIST FROM MEMORY.

4. After they have finished, check to see which students have been able to repeat the list wholly or in part.

5. Notice that students who are unsuccessful in either the first or second presentation of the test are frequently the first ones finished.

(The test may be repeated, using numbers. Most students have a different form of recall for numbers than they have for words.)

Evaluation Of The Test

1. A teacher will have a better understanding of the individual differences of the students.

2. The teacher can encourage the students to find their natural way of learning.

While all three types of learning should be developed, a student should use his or her natural way of learning when under pressure to study the subject.

Visual learners should realize that while they learn fast, they can forget equally fast. To strengthen their recall, it is good to develop the practice of writing and outlining the subject.

Audio learners will benefit from the use of a tape recorder. The more he or she hears a subject, the more recall is possible.

Kinesthetic learners must write to recall material learned. Outlining materials is an effective method of strengthening recall.

A photographic mind is like a polaroid camera: the picture develops fast and can fade equally fast unless the emulsion is placed on the picture. In the learning process, the emulsion is writing as well as looking. The photographic mind will often have a problem with abstract thinking, especially in mathematics. Seeing the picture in association with the abstraction often assists this student.

Usually, a person has more than one way to learn. An individual may be highly visual, fairly kinesthetic, but not audio. Any combination of learning methods is possible.

However, all three types of learning should be developed as far as possible in each student. An audio learner, should try to visualize what he or she hears. A visual learner should try to be more attentive in lecture presentations. A kinesthetic learner should try to listen and to visualize. All three need to write.

A teacher can cover all three types of learners in one group by presenting material in the tree ways of learning:

VISUAL: Ability to hear and write what is seen

AUDIO: Ability to recognize visually and write what is heard

KINESTHETIC: Ability to hear and visualize what is written

RESOURCE E

The following resource

What is Your Learning Style?

is taken from

"Puzzled about Educating Special Needs Students?"

and has been reprinted with permission of

Wisconsin Vocational Studies Center
University of Wisconsin - Madison

1980

WHAT IS YOUR LEARNING STYLE?

List A

_____ 1. People say you have terrible handwriting.

_____ 2. You don't like silent filmstrips, pantomimes, or charades.

_____ 3. You would rather perform (or listen to) music than do (or view) art, and you would rather listen to a tape than look at a filmstrip.

_____ 4. You sometimes leave out words when writing, or sometimes you get words or letters backwards.

_____ 5. You can spell out loud better than when you have to write it down.

_____ 6. You remember things you talk about in class much better than things you have to read.

_____ 7. You dislike copying materials from the blackboard or bulletin boards.

_____ 8. You like jokes or riddles better than cartoons or crossword puzzles.

_____ 9. You like games with lots of action or noise better than checkers or most other board games.

_____ 10. You understand better when you read aloud.

_____ 11. Sometimes you make math mistakes because you don't notice the sign or because you read the numbers or directions wrong.

_____ 12. It seems like you are the last one to notice something new - e.g. that the classroom was painted or that there is a new bulletin board display.

_____ 13. Map activities are just not your thing.

_____ 14. You must struggle to keep neat notes and records.

_____ 15. You use your fingers as a pointer when you read.

_____ 16. You frequently hum or whistle to yourself when you are working.

_____ 17. Sometimes your eyes just "bother" you, but your eye tests come out all right, or you have glasses which you eye doctor says are just right for you.

_____ 18. You hate to read from ditto sheets, especially blotty ones.

_____ 19. "Matching test" questions are a problem to sort out (over and above not knowing some of the answers.)

_____ 20. Sometimes when you read you mix up words that look similar (pill-pull, bale-hale).

_____ SCORE: NUMBER ANSWERED YES

List B

_____ 1. It seems like you always have to ask somebody to repeat what he or she just said.

_____ 2. Sometimes you may find yourself "tuned out" - staring out the window maybe when you were really trying to pay attention to something.

_____ 3. Often you know what you want to say, but you just can't think of the words. Sometimes you may even be accused of "talking with your hands", or calling something a "thingamajig" or a "whatyacallit."

_____ 4. You have been in speech therapy at some time previously.

_____ 5. You may have trouble understanding a person who is talking to you when you are unable to watch the persons face while he or she is speaking.

_____ 6. You would rather receive directions in a demonstration format than in spoken form.

_____ 7. When you watch TV or listen to the radio, someone is always asking you to turn it down.

_____ 8. Your family says that you say, "huh?" too much.

_____ 9. You would rather demonstrate how to do something than make a speech.

_____ 10. Spoken words that sound similar (bell, bill, pin or pen) give you trouble. Sometimes you can't tell them apart.

_____ 11. You have trouble remembering things unless you write them down.

_____ 12. You like board games such as checkers better than listening games.

_____ 13. Sometimes you make mistakes in speaking (like saying "he got expended from school").

_____ 14. You like art work better than music.

_____ 15. You have to go over most of the alphabet to remember whether, e.g. m comes before r.

_____ 16. You like it better when someone shows you what to do, rather than just telling you.

_____ 17. You can do a lot of things that are hard to explain with words - like fixing machines or doing macrame.

_____ 18. You usually answer questions with "yes" or "no" rather than with complete sentences.

_____ 19. Often you forget to give verbally received messages (such as telephone messages) to people unless you write them.

_____ 20. You are always drawing little pictures on the edges of your papers, or doodling on scratch paper.

_____ SCORE: NUMBER ANSWERED YES

If list A is very much higher than list B, the person in question could be considered an auditory learner. If list B is much higher, it indicates that the person in question might be considered a visual learner. If both lists are high, this persons best learning mode would probably be touching and doing.

The above material is drawn from Hayes, Marnell L. The Tune-in, Turned-on Book About Learning Problems. San Rafael, California: Academic Therapy Publications, 1974.

RESOURCE F

The following resource

Visual and Auditory Behavioral Checklist and Compensatory Tactics

is taken from

"The Problems of the Adult Learner: A Handbook for Teachers"

and has been reprinted with permission of

William Rainey Harper College
Palantine, Illinois

VISUAL AND AUDITORY BEHAVIORAL CHECKLIST AND COMPENSATORY TACTICS

How to use the Behavioral Checklists and Compensatory Tactics

1. Identify a student as having academic difficulty in either language arts or math. Remember, the student does not appear to be primarily mentally impaired, emotionally disturbed, educationally deprived, or physically or sensorially handicapped. The student seems brighter than current achievement indicates.

2. Refer to the Behavioral Checklist and Compensatory Tactics for your subject area - language arts or math.

3. Read through the behaviors listed (these appear in upper case type), and check those that apply to the student in question.

4. Repeat steps 2 and 3 with the Auditory Behavioral Checklist and Compensatory Tactics.

5. For each behavior checked, note the compensatory tactics listed immediately following. Tactics for the general behaviors described can be employed without a great deal of difficulty. Tactics for specific behaviors will, of course, require more involvement on the part of the instructor.

Cautions

Most adults with learning disabilities of a moderate to severe nature would probably be enrolled in a basic skills class. If the institution does not have a minimum reading or math level for inclusion in GED classes, many of these students will also be enrolled in GED classes.

One must be very careful in assessing learning disabilities in ESL students. Because of the language difference one cannot assume a "breakdown" in the learning process if the model of the process is based on the English language. However, it is hoped that ESL students experiencing difficulty in academic subjects can also be helped by utilizing some of the tactics outlined in this section of the handbook.

VISUAL BEHAVIORAL CHECKLIST AND COMPENSATORY TACTICS

Language Arts

General Behavior

THE LEARNER MAY RESPOND BETTER TO ORAL PRESENTATIONS AND DISCUSSIONS THAN TO VISUAL AIDS, WORKSHEETS, BOARD WORK OR SEAT ASSIGNMENTS.

- When visual aids are used in class, supplement such aids with a verbal explanation.

- It would be helpful if the instructor would talk about any writing or diagrams posted on the board.

Specific Behaviors

THE LEARNER MAY REVERSE, INVERT, OR OMIT WORDS IN READING.

- Have the learner write or trace with pen or finger the corrected version of a letter or word that has been reversed. Have the student practice writing the corrected letter or word often.

- The ditto materials offered by Continental Press, Inc. (see Appendix A-Material: A) will give the student practice in detecting reversals.

- If a learner inverts or omits words, have him use an index card placed under the sentence being read as a visual guide. The instructor can also tell the student to underline slowly the words as he reads.

THE LEARNER MAY EXHIBIT LIP MOVEMENT (SUB-VOCALIZATION) WHEN READING SILENTLY.

- Lip movement may be a compensatory tactic the learner has developed on his own. Therefore, the instructor will have to use his judgment in deciding if lip movement is to be eliminated.

- Instruct the learner to pace his reading with his hand as he reads.

- Have the learner make a conscious effort not to move his lips while reading by placing his tongue against the back of his upper teeth.

- After practice, have the learner move his hand more rapidly across the page, forcing him to read faster.

THE LEARNER MAY HAVE DIFFICULTY PERCEIVING CERTAIN LETTER PATTERNS IN WORDS, FOR EXAMPLE, INABILITY TO RECOGNIZE PREFIXES AND SUFFIXES.

- The learner experiencing difficulty with the visual aspects of reading should be instructed in and encouraged to use phonetic skills which utilize the auditory modality. The instructor can identify the phonetic skills that a learner does not know, either informally or by administering the Phonics Knowledge Survey (see Appendix A - Material: W), and teach the weak areas (see Appendix A - Material: P8).

- This type of learner may be proficient in pronouncing common prefixes and suffixes, but unable to visually pick these elements out of words. Inability to recognize prefixes contributes to poor reading ability. Any teacher-made activity which visually separates word-parts will train the student in "looking" for prefixes and suffixes. For example, words can be written on index cards with the prefix or suffix in red. The student can be taught the meaning of these affixes and be led to a greater understanding of words. It may also be helpful to have him practice writing prefixes and suffixes from memory to strengthen his ability to recognize these elements. Some commercial materials are available which visually separate affixes from word stems (see Appendix A - Materials: C,D).

THE LEARNER MAY HAVE DIFFICULTY REMEMBERING SIGHT WORDS.

- Learners who have a visual learning problem often have difficulty recalling sight words, especially words that are not phonetic or words that have similar configurations (they, there, where). Drill with auditory and kinesthetic (using the muscle movement of the hand). Clues can be very helpful in teaching sight words to these learners. Problem words can be identified by the instructor or learner and printed on index cards in large letters. The learner can then trace each word three times with his index finger while saying the word. Next, the learner should write the word from memory. This process can be repeated often until he can recognize the word at sight.

- A language master (see Appendix A - Material: E) or a tape recorder can be used to teach sight words. The instructor should write sentences on the language master cards or on paper if using a tape recorder. Each sentence should contain one sight word being studied and the word should be underlined. The learner should read the sentence and attempt to say the word. After he has done this, he should play the language master or tape recorder to see if he is correct.

THE LEARNER MAY HAVE EXCESSIVE SPELLING ERRORS. MISPELLED WORDS OFTEN CONTAIN THE CORRECT LETTERS BUT THEY WILL APPEAR IN THE WRONG SEQUENCE.

- The instructor should test a learner's skill in spelling the Dolch Words (see Appendix A - Material: F) and words that generally follow phonetic rules, and (2) words that are not phonetic. The learner with visual learning problems needs to be helped with visual sequencing, a major skill in being able to spell correctly. He should also be encouraged to learn as many phonetic spelling generalizations as possible, since this is probably a strong area for the student. A suggested procedure for teaching spelling words is outlined below:

	Phonetic Word (Spell word by Sound Units)	Unphonetic word (Spell word by Letter Units)
Instructor Says:	supersede	psycho
Student's Wordsheet:	__persede	_sycho
Student's Response:	supersede	psycho
Instructor Says:	supersede	psycho
Student's Wordsheet:	_____sede	__ycho
Student's Response:	supersede	psycho

- Several words can be learned at the same time. Once the student has learned the method, he can set up his own wordsheets at home as long as someone is available to dictate the words. This procedure should be continued until the student can write the entire word correctly from memory. Review of words that have been mastered should be conducted frequently.

THE LEARNER MAY HAVE DIFFICULTY LOCATING SPECIFIC INFORMATION IN A READING PASSAGE ONCE THE PASSAGE HAS BEEN READ.

- The learner should be instructed in techniques of pre-reading (skimming), reading important sentences aloud, and using a pencil to underline important information. When skimming, the learner should be instructed to read the first and last sentences of each paragraph. Next, the student should return to the passage and read it silently while underlining the information that he feels is important. If the reading passage includes questions, the student should read the questions aloud after skimming and before reading the passage silently. The Specific Skills Series offers practice in locating information and can be adapted to the above approach (see Appendix A - Material: P1).

THE LEARNER MAY BE UNABLE TO PERCEIVE DETAILS IN CHARTS, GRAPHS, AND MAPS.

- If the learner is confused by the visual material presented in charts, graphs, and maps, the instructor can compensate for this confusion by using verbal and concrete descriptions of the graphic material. For example, ABE students are sometimes taught to recognize longitude and latitude in map-reading. These map symbols can be explained by using a great deal of verbal description. Associative clues can be taught, such as "long" reminding a student of the way longitude lines run on a map. In extreme cases, a three dimensional representation of the map, chart, or graph should be used.

- Commercial materials that cover basic map, chart, and graph skills and include tapes for additional auditory clues are available (see Appendix A - Material:B).

THE LEARNER MAY BE CONFUSED BY AND UNABLE TO USE AN IBM ANSWER SHEET.

- Have the learner practice reading questions and marking answers on an IBM Sheet. He should use an additional visual aid (index card, check marks, or thumb next to question being answered) for locating and marking the answer. The aid or "crutch" can later be eliminated.

THE LEARNER MAY HAVE ILLEGIBLE HANDWRITING. HANDWRITING MAY INCLUDE REVERSALS, INVERSIONS, OMISSIONS, OR POOR SPACING.

- For this disorder is is important to note if the learner makes errors when copying or when writing from memory. The following tactics will help compensate for disabilities of both types.

Errors in Copying

1. Demands for legible, neat work should be kept to a minimum.

2. Discover whether the learner's ability improves when he uses an alternate style (e.g., cursive or manuscript), and encourage the student to use his better style.

3. Have the learner practice tracing letter and word forms. A commercial material available for this purpose is listed in Appendix A (Material: G).

4. If the learner spaces words incorrectly, have him use his thumb as a spacing guide between words.

5. Encourage the learner to use a typewriter whenever possible.

Errors of Memory

1. Suggestions 1,2,3, and 5 above can also be used effectively for this disorder.

2. Have the learner practice his handwriting by adding auditory clues. For example, as the learner attempts to write a cursive m he could "talk through" the letter form: "we start up here and swoop down, and the m has two humps."

3. Letters that the learner has difficulty writing can be traced on the back of his hand with the eraser end of a pencil. The student is asked to concentrate on the "feel" of the form. He then attempts to write the letter from memory.

Mathematics

General Behavior

THE LEARNER MAY RESPOND BETTER TO ORAL PRESENTATIONS AND DISCUSSIONS THAN TO VISUAL AIDS, WORKSHEETS, BOARD WORK OR SEAT ASSIGNMENTS.

- When visual aids are used in class, supplement such aids with a verbal explanation.

- Discuss any writing or diagrams posted on the board.

Specific Behaviors

THE LEARNER MAY REVERSE DIGITS WHEN READING A NUMBER ORALLY.

- Have the learner trace the numerals with his finger or pencil in drill fashion until he is able to "feel" the correct version. Have him practice writing the corrected numerals often.

THE LEARNER MAY EXPERIENCE DIFFICULTY WITH NUMBER-SYMBOL RELATIONSHIPS, SUCH AS PLACE-VALUE AND FRACTION CONCEPTS.

- A student with a visual learning problem may have difficulty attaching meaning to a numerical symbol. The problem may manifest itself as an inability to read place-value or to understand fraction concepts. To compensate for this problem, use concrete teaching devices whenever possible.

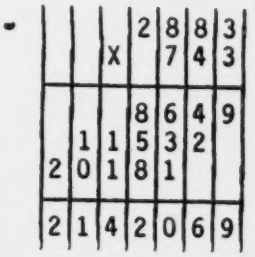
  Place Value - Use a teacher-made place value chart which indicates in columns the ones, tens, etc. positions of numerals. The learner practices reading various numerals from the chart. A variation of this method would be to use concrete items such as different colored blocks, with each color representing a place value along with the chart. Or, the instructor may have the learner use large block graph paper, with each block shaded in a different color representing various place values.

A learner may also practice reading place values set-up by the instructor on language master cards (see Appendix A - Material: E). The learner records the number and then plays the instructor track of the card in order to confirm his guess.

Fraction Concepts - Concrete devices such as fraction blocks, cut-up pie figures, diagrams on the board, or rulers will teach the learner to read fractions, as well as to "see" the relationship between numbers in a fraction. The language master can also be utilized in a variety of ways.

THE LEARNER MAY ALIGN NUMERALS INCORRECTLY WHEN COMPUTING A PROBLEM.

- Learners should be given additional visual clues when computing problems. One method of establishing extra visual support is to draw number columns in problems. Example:



			X	2	8	8	3
					7	4	3
				8	6	4	9
	1	1		5	3	2	
2	0	1		8	1		
2	1	4	2	0	6	9	

- Learners may also work problems on graph paper placing one numeral in each square.

THE LEARNER MAY NOT BE ABLE TO REMEMBER VARIOUS STEPS INVOLVED IN MULTI-PROCESS PROBLEMS.

- Multi-process calculations,such as double-digit multiplications, division, and fractions, can be taught by having the student learn to orally "talk through" the steps in a problem. A tape recorder can be used. A learner might memorize the steps in long division by hearing or saying the following while computing: First, we divide and put the answer on top, next we multiply, then we subtract, and then we divide again.

- Additional practice in this skill can be provided by presenting the learner with a problem that has been miscalculated, i.e., a step omitted or out of sequence. The learner is required to identify and correct the problem.

THE LEARNER MAY EXPERIENCE DIFFICULTY IN ANALYZING AND COMPUTING APPLICATION PROBLEMS (WORD PROBLEMS, TIME, MONEY, MEASUREMENT, ETC.) WHEN SUCH PROBLEMS ARE PRESENTED IN A WRITTEN OR DIAGRAM FORM.

- Troublesome problems can be read into a tape recorder beforehand. The learner listens to the problem as he reads along.

- The learner can orally "talk through" a word problem and diagram the problem before attempting to calculate it.

THE LEARNER MAY HAVE DIFFICULTY REMEMBERING THE MEANING OF MATHEMATICAL SYMBOLS SUCH AS PROCESS SIGNS AND ABBREVIATIONS.

- The instructor should identify the symbols with which the learner is having difficulty. These symbols can then be written on language master cards (see Appendix A - Material: E) with their explanations given on the instructor track of the tape. The learner can record his answer on the student track and check the validity of his response by listening to the instructor track. A tape recorder can be used in the same manner as the language master with cards corresponding in sequence to pre-recorded explanations.

- Learners can also be encouraged to drill on symbols by writing the symbol as they say its definition out loud.

- For some math symbols, learners should be encouraged to use associative clues in order to remember the meaning of each symbol. For example, the greater than (>) and less than (<) signs can be explained in terms of points. Just as there are two "points" on the left of the sign >, and only one "point" on the right >, 2 is greater than 1 (2 > 1). The reverse is true for the less than sign; i.e., there is only 1 point on the left and 2 points on the right, therefore 1 is less than 2 (1 < 2). The bigger number will always be where the two points are.

- Flash cards, with a diagram or representation of the process symbol on the reverse side, can also be helpful. The learner can "drill" with these cards saying the definition out loud.

THE LEARNER MAY BE UNABLE TO WRITE NUMERALS FROM MEMORY.

- The instructor and learner can identify numerals that are essential for the learner to remember, e.g., 5,280 ft. in a mile. The definition of the numeral can be written on a language master card (see Appendix A - Material: E). The answer or numeral can be recorded on the instructor track of the card. The learner should record his answer on the student track of the card and confirm his guess by listening to the instructor track.

- The student could practice writing and saying the numeral to be remembered.

THE LEARNER'S WRITTEN WORK MAY BE ILLEGIBLE. WORK MAY INCLUDE NUMERALS THAT ARE REVERSED, INVERTED, OMITTED AND POORLY SPACED.

- For this disorder it is important to note if the learner makes his errors when copying or when writing from memory. The following compensatory tactics will cover disabilities of both types.

Errors in Copying

1. Demands for legible, neat work should be kept to a minimum.

2. Have the learner practice tracing correct versions of numbers that are often reversed, inverted, or omitted.

3. If the learner spaces his numerals poorly, have him use his thumb as a spacing guide between numerals.

4. Lined or graph paper for math problems can also be a useful spacing guide.

Errors of Memory

1. Suggestions 1 and 2 above can also be used effectively for this disorder.

2. Numerals that the learner has difficulty writing can be traced on the back of his hand with the eraser end of a pencil. The learner is asked to concentrate on the "feel" of the number form. He then attempts to write the numeral from memory.

AUDITORY BEHAVIORAL CHECKLIST AND COMPENSATORY TACTICS

Language Arts

General Behavior

THE LEARNER IS LIKELY TO RESPOND BETTER TO VISUAL AIDS, WORKSHEETS, AND BOARD WORK THAN TO ORAL PRESENTATIONS AND DISCUSSIONS.

- When lecturing, write some of the information on the board, even if in an abbreviated form.

- The use of visual aids, outlines, diagrams, worksheets, and the like will be very helpful to the student with auditory problems.

- When topics such as time, orientation, and space are discussed, it is helpful to use visual and concrete examples to define these abstracts terms. For example, when discussing historical dates, a time line on the board is most helpful.

Specific Behaviors

THE LEARNER MAY EXPERIENCE DIFFICULTY IN REMEMBERING CONSONANT AND VOWEL SOUNDS.
THE LEARNER MAY EXPERIENCE DIFFICULTY IN ATTEMPTING TO SOUND WORDS OUT.

- Learners should be taught by sight or whole word methods. If repeated instruction in phonetic analysis fails to increase the learner's word attack ability, phonics instruction should be suspended for the time being.

  Students can learn words by studying the words' configuration, by daily drill of troublesome words, and by learning an initial sight word and learning other words in the same family (e.g., hat, cat, pat).

- Occasionally, poor auditory learners can learn to read through a tactile-kinesthetic (touching movement) approach. A basic tactile-kinesthetic approach is outlined on the following page.

Write the word to be learned in large letters (manuscript) on a sheet of paper. If possible use a crayon to write the word. Crayon wax enables the student to "feel" the letter.

Have the learner trace the word with his index finger (letter-by-letter) several times while saying the whole word (not individual letters).

Remove the word and have the learner "write" the word in the air or on a table top with his finger. As the student "writes" the word he should say the whole word.

Have the learner write the word on a separate sheet of paper from memory.

Words being worked on and words mastered can be kept in a file box and reviewed often. Words should often be used in sentences or stories.

- Adults reading below a third grade level may be effectively taught through Experience Stories. These are the learners' own experiences dictated and copied by the teacher, and then read, copied, and re-read by the students.

- As a supplement to the whole word/sight method of reading, a learner should be taught to use other visual skills of word attack. Structural analysis, involving recognition of prefixes, suffixes, and root words may be effective.

- Since auditory learning problems vary in degree with the individual and since some phonetic analysis is desirable, the following criteria should be heeded before phonetic instruction occurs:

  The learner should have considerable sight vocabulary.

  The learner should have gained some degree of confidence in his reading ability.

  The instructor can then gradually introduce some phonetic skills. If the skills prove to be "unattainable" for the student, then the program should be abandoned.

  Phonetic programs should be used in conjunction with visual clues. The goal is to have the learner associate a visual image with an appropriate sound. Sounds should never be taught in isolation, but always connected with a letter, within a word, and/or with a picture color clue.

- Even if the learner is only able to master the consonant sounds, he can use this skill in combination with other word attack skills. After having sounded out the initial consonant, the learner can finish the remainder of the sentence and then return to the unknown word. He can ask himself, "What word begins this way and makes sense in the sentence?" For more information on teaching context clues, see the unit on reading comprehension.

THE LEARNER MAY EXPERIENCE DIFFICULTY IN ATTEMPTING TO PRONOUNCE MULTI-SYLLABLE WORDS.

- The learner can be taught the "chin bump" method for breaking words into syllables. The learner places his hand under his chin and attempts to pronounce the word in and exaggerated fashion. When the learner's chin moves down or "bumps" (he'll be able to feel it with his hand), a syllable of the word has been spoken.

THE LEARNER FREQUENTLY SUBSTITUTES (CALLS THE WRONG WORD) WHILE READING.

- The instructor can read a passage into a tape recorder. The learner is then asked to listen to the tape while he reads along with it. The emphasis in this type of exercise is to have the learner raise his awareness in translating the visual symbol to the auditory counterpart.

- To vary this procedure, the learner can read a passage into a tape recorder. Then he can listen to the tape and re-read the passage, circling the words that he substituted.

- The learner can be asked to keep a file of words that he substitutes. He can drill with these words and learn them as sight words.

THE LEARNER MAY HAVE EXCESSIVE SPELLING ERRORS. MISSPELLED WORDS WILL CONTAIN "ILLOGICAL" OR UNPHONETIC CHOICES OF LETTERS.*

- The learner should be taught troublesome spelling words through a gradual process of visual closure. In other words, the learner is asked to supply only one letter at a time, until he can visually remember how to spell the whole word.

  The instructor should test a learner's skill in spelling the Dolch words (see Appendix A - Material: F) and identify those words needing work. These words should be mastered first, and additional words can be added later. The procedure to follow in teaching spelling by visual closure is outlined below:

Instructor Says:	"psychologist"
Student's Worksheet:	"_sychologist"
Student's Response:	"psychologist"
Instructor Says:	"psychologist"
Student's Worksheet:	"__ychologist"
Student's Response:	"psychologist"

  Several words can be learned at the same time. Once the student has learned the method, he can set up his own worksheets at home as long as someone is available to dictate the words.

  This procedure should be continued until the learner can write the entire word correctly form memory. Review of words that have been mastered should be conducted frequently.

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*Myklebust and Johnson, Learning Disabilities Educational Principles and Practices, New York, 1986, pp.239-242

THE LEARNER MAY BE CONFUSED BY QUESTIONS THAT CONTAIN QUALIFYING WORDS, SUCH AS ONLY, ALWAYS, NEVER, NOT.

- The learner should first be given practice in visually identifying qualifying words. Once words have been identified, the learner should circle these words when they occur in sentences or questions.

- The learner should be instructed to re-read the questions several times.

- As the learner re-reads the sentence, he should be instructed to "visualize", in concrete terms, what the question is asking. For example: "A bill originating in the Senate might be amended by all of the following except ---"

  Learner reads the question several times and identifies the words all and except as qualifiers.

  Learner asks himself - "What does all refer to? What is meant by except?"

  Learner can "visualize" the word all to mean every member of a group - in this case the entire group of answers.

  Learner can "visualize" the word except as a group of people with someone left out - an exception.

  All refers to the answers, except means the one left out, or the one that does not belong. Thus, the question must want to know which answer does not belong.

  This process may appear obvious to the casual observer, but to the adult with an auditory learning problem, the process of "reasoning by visual image" can be extremely helpful.

THE LEARNER MAY GIVE THE IMPRESSION OF KNOWING OR UNDERSTANDING A CONCEPT (BECAUSE OF PERFORMANCE ON A TEST) BUT BE UNABLE TO ADEQUATELY DESCRIBE OR DISCUSS THE CONCEPT.

- Not very much can be done in a compensatory way to aid a learner with a verbal expressive disorder. If the disorder is serious in nature, the learner can be referred to a learning diagnostician.

- Patience on the part of the instructor and not requiring a verbal response from such a learner are prime recommendations.

- The instructor could have the learner submit many of his responses or questions in writing and deal with these privately.

- If verbal responses are necessary, the instructor should structure his questions so that the learner can answer the question with a simple reply.

Mathematics

General Behavior

THE LEARNER IS LIKELY TO RESPOND BETTER TO VISUAL AIDS, WORKSHEETS, AND BOARD WORK THAN TO ORAL PRESENTATIONS AND DISCUSSIONS.

- When lecturing write some of the information on the board, even if in an abbreviated form.

- The use of visual aids, outlines, diagrams, worksheets, and the like will be very helpful to the student with auditory learning problems.

- When topics such as time, orientation, and space are discussed it is helpful to use visual aids and concrete examples to define these abstract terms. For example, when discussing historical dates, a time line on the board is most helpful.

Specific Behaviors

THE LEARNER MAY EXPERIENCE DIFFICULTY IN COMPUTING OPERATION AND APPLICATION PROBLEMS THAT ARE PRESENTED ORALLY.

- The most obvious compensatory tactic to use is to give visual support clues when problems are done orally in class. Use of the board, visual aids, and allowing the learner to read a problem as well as hear it will be helpful.

- The learner can be urged to "visualize" material mentioned in word application problems. If the problem states, ". . . a car salesman sold three used cars for $875 each and two cars for $1100 each . . "* the learner should either visualize or draw diagrams of the number of cars and their prices. The process of visual reasoning can be extremely helpful for adults with auditory learning problems.

THE LEARNER MAY EXPERIENCE DIFFICULTY IN RECALLING THE MEANING OF TERMINOLOGY PRESENTED ORALLY, FOR EXAMPLE, BASE, SET, SQUARE.

- The learner can be provided with flash cards with the troublesome terms written on one side. On the reverse side, the definition and a pictorial or visual representation of the term should be written. The learner should drill on these terms often.

THE LEARNER MAY NOT BE ABLE TO RECALL BASIC ADDITION AND MULTIPLICATION FACTS.

- The learner should be encouraged to use a "crib" sheet that contains troublesome addition and multiplication facts.

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*Jerry Howett, GED, How to Prepare For the GED Exam. Test 5 Mathematics

- The learner can say and hear number facts in an effort to memorize the facts. Multiplication combinations can be printed (the problem part) on a language master card (see Appendix A - Material: E). The instructor can record the problem and the answer on the instructor track of the card. The learner can record the combination and his answer on the student track of the card. The learner then confirms his response by listening to the instructor channel.

- For students who simply cannot learn basic number combinations, concrete tactile crutches are the only answer. For example, the learner should be encouraged to multiply up to the combination he knows, and then on his fingers above that. Also, if a student can learn multiplication facts 1 - 5, he can use his fingers for facts 6 - 10. This procedure is outlined in Hayes's book, The Tuned-In Turned-On Book About Learning Problems (see Appendix A - Material: H).

THE LEARNER MAY NOT BE ABLE TO COUNT BY ROTE.

- Commonly used numerals in rote counting (5,10,15,20,25,30) can be placed in sequence on flash cards. Alternate numerals can be written in different colors. The learner uses his stronger visual memory skills to remember the sequence. For example, if a student were learning to rote count by 3's to 20, he would begin by learning a sequence of only three or four numerals at a time before more numerals were added to the sequence. Flash cards can be set up in the following manner:

3	6	9	12	15	18	21	24	27
green	red	green	red	green	red	green	red	green

Each card would be drilled individually and then as a group until the student mastered the entire sequence.

THE LEARNER MAY GIVE THE IMPRESSION OF KNOWING OR UNDERSTANDING A CONCEPT (BECAUSE OF PERFORMANCE ON A TEST) BUT BE UNABLE TO DESCRIBE ADEQUATELY OR DISCUSS THE CONCEPT.

- The reader is directed to the compensatory tactics listed for this behavior under the language arts section.

Reading Comprehension

Because the area of reading comprehension is complex and may involve the processing of information in the visual, auditory, and haptic (touch and muscle movement) learning modilities, the subject is treated separately. It is impossible to characterize the acquisition of meaning (comprehension) as solely a visual or auditory process. Furthermore, Myklebust and Johnson point out:

> . . . clinical teaching experience and certain research studies suggest that the major problem of the dyslexic (student with a learning problem in reading) is not in understanding what he reads but in transducing . . . In other words, dyslexics fail to comprehend because they cannot convert the visual symbol into the previously acquired auditory symbol.*

The visual and auditory aspects of reading that a learner may have difficulty with have been identified in the Behavioral Checklists, and suggested teaching tactics have also been enumerated. Most authorities, however, recognize that a student having difficulties with the decoding process will also need support in acquiring reading comprehension skills.

There are many types of comprehension skills. Major skills are listed below, from basic to complex, and are offered to the instructor as a guide in program planning. Under each skill, the reader is directed to materials presented in Appendix A that will aid the learner in developing that skill. The materials indicated by no means represent a definitive list but were chosen because they have proven to be effective in working with ABE learners.

Comprehension Skills

1. Vocabulary - Individual word meaning is the foundation of the higher comprehension skills. The more words that a student knows the meaning of, the greater the degree of understanding when encountering those words in reading. (See Appendix A - Materials: I, J, K, L, M, N, O)

2. Context Clues - The ability to derive meaning and/or pronounciation from a word by the way it is used in a sentence. (See Appendix A - Materials: L, P1, N)

3. Details - The ability to understand and remember specific details (facts) in a reading passage. (See Appendix A - Materials: M, N, P3, Q9, R, ZZ)

4. Main Idea - The ability to recognize and recall the central theme presented by an author. (See Appendix A - Materials: M, N, P4, Q1, R, ZZ)

5. Follwing Directions/Following a Sequence - The ability to follow an author's instructions and sequence of events as presented in a reading passage. (See Appendix A - Materials: P5, P6, Q8)

6. Inference - The ability to understand or draw a conclusion based on partial information given by an author. (See Appendix A - Materials: A2, M, N, P7, Q2, Q4, Q5, R, S, T1, T2, T3, ZZ)

7. Evaluation/Critical Reading - The ability to judge written material by some criteria. This skill is highly complex and involves such things as identification of author's organization, style, tone, figurative language, symbolic meanings, fact or opinion, character traits, etc. (See Appendix A - Materials: A2, M, N, Q3, A6, A7, R, T1, T2, T3, ZZ)

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*Myklebust and Johnson, p. 190

APPENDIX A - TEACHING MATERIALS AND TESTS

Material Code	Material/Publisher	Comments
A	1. Likenesses and Differences 2. Reading and Thinking Skills Continental Press, Inc. Elizabethtown, Pa. 17022	Visual discrimination. Comprehension, grades 1 - 6.
B	Individualized Cassette Learning Package #9205 - Graphs #9206 - Tables #9207 - How Do I Get There? Media Material, Inc. 2936 Remington Ave. Baltimore, Maryland 21211	Basic map and chart reading skills with tapes for additional auditory clues.
C	Webster Word Wheels McGraw-Hill Book Co. Manchester, Mo. 63011	Consonants, blends, prefixes, suffixes with visual support.
D	Word Prefix and Suffix Cards Kenworhty Educational Service, Inc. Buffalo, New York 14240	23 common prefixes and 24 suffixes visually separated from the word stem.
E	Language Master and Blank Cards Bell and Howell, Inc. 7100 McCormick Rd. Chicago, Ill. 60645	Offers visual and auditory clues. Cards and machine can be used in a variety of ways.
F	Dolch 220 Service Words	Available from many sources. The Dolch words make-up 50% of all reading matter. Should be taught as sight words.
G	Auto-Kinetic Handwriting Program Autokinetic Co. Amarillo, Texas 79120	Manuscript and cursive kits available. Student traces or copies from forms provided.
H	The Tuned-In, Turned-On Book About Learning Problems Marnell Hayes Academic Therapy Publications San Rafael, California 94901	Pages 45-48 offers a concrete aid to multiplication. Book also has other compensatory suggestions. See bibliography for full listing.

Material Code	Material/Publisher	Comments
I	Reader's Digest Reading Books 1-6 Reader's Digest Services, Inc. Pleasantville, New York 10570	Grades 1-6, stories with vocabulary, questions and glossaries (not always at an adult interest level)
J	Advanced Reading Skill Builder Books 1-4 Reader's Digest Services, Inc. Pleasantville, New York 10570	Jr. High level, stories with vocabulary and comprehension questions.
K	Thorndike Barnhart Beginning Dictionary Scott, Foresman & Co. 433 E. Erie St. Chicago, Ill. 60611	All levels - to be used at instructor's discretion. Definitions and most words used in sentences.
L	Increase Your Vocabulary Books 1&2 Cambridge Book Co. 488 Madison Ave. New York, New York 10022	Basic level, deals with prefixes, suffixes, homophones, antonyms, and context clues.
M	Introduction To Reading - Pre-GED Program Cambridge Book Co. 488 Madison Ave. New York, New York 10022	Upper elementary level, content area vocabulary in social studies, literature, science. Comprehension questions.
N	Reading Skill Power -2- GED Program Cambridge Book Co. 488 Madison Ave. New York, New York 10022	High School level. Content area vocabulary and comprehension questions.
O	Thirty Days to a More Powerful Vocabulary Funk and Wagnalls Co.	High School level - programmed vocabulary builder.
P	Specific Skills Series 1. Locating the Answer 2. Using Context Clues 3. Getting the Facts 4. Getting the Main Idea 5. Following Directions* 6. Detecting the Sequence* 7. Drawing Conclusions 8. Working with Sounds* Barnell-Loft, Ltd. 958 Church St. Baldwin, Long Island, New York, 11510	Covers specific comprehension skills from grades 1-6. Workbook format. *Advanced levels also available.

Material Code	Material/Publisher	Comments
Q	Comprehension Skills Series 1. Understanding the Main Idea 2. Making a Judgment 3. Understanding Characters 4. Drawing a Conclusion 5. Making an Inference 6. Recognizing Tone 7. Appreciation of Literary Forms 8. Retaining Concepts and Organizing Facts 9. Isolating Details and Recalling Facts	Upper elementary and high school level. Workbook format. Supplemental tapes available for additional auditory clues.
R	Critical Reading and Listening Skills Sets A,B,C. Instructional/Communications Technology, Inc. Huntington, New York 11743	Grades 1-3. Comprehension skills. Workbook and worksheet format. Each comprehsion skill is identified.
S	Reading Development Kit A Addison-Wesley Publishing Co. Menlo Park, California 94025	Grades 3-6. Comprehension questions based on passages in the areas of work, health, safety, law and science.
T	Reading for Understanding Kits 1. General 2. Junior 3. Senior Science Research Associates Inc. 259 E. Erie St. Chicago, Illinois 60611	 Grades 3 - College Grades 3 - 8 Grades 8 - 12 Inference and evaluation skills comprehension questions.
U	Standardized Achievement Tests Funk and Wagnalls Co.	Since there are a variety of standardized achievement tests in use today, no single test is mentioned. The value of an achievement test score to the instructor is to insure that the material being assigned is instructional in nature, i.e., not too easy - not too difficult. Tests of a more diagnostic nature are mentioned below.

Material Code	Material/Publisher	Comments
V	Gilmore Oral Reading Test Harcourt Brace Jovanovich, Inc. 757 Third Ave. New York, New York 10017	Suitable for learners reading from grade 1-8. Will render an instructional reading level but more importantly will allow the instructor to see what type of errors the student is making. Grades 1-3. Comprehension skills. Workbook and worksheet format. Each comprehsion skill is identified.
W	Durkin-Meshover Phonics Knowledge Survey Benefic Press 1900 N. Narragansett St. Chicago, Illinois 60639	Easily administered in 10-30 min. Will identify phonetic elements that the student is weak in.
X	Key-Math Diagnostic Arithmetic Test American Guidance Service Inc., Publishers' Building Circle Pines, Minnesota 55014	Tests students in basic math abilities form grades 1-8. Fourteen sub-test measure abilities in content, operations, and applications. Specific problem areas are identified for the instructor.
Y	Mills Learning Methods Test The Mills Center Ft. Lauderdale, Florida 33310	For use with students reading between primer and grade 3. Tests a student's preferred method of reading; Visual, Auditory, Kenesthetic or multisensory approaches.
Z	Wepman Auditory Discrimination Test Joseph Wepman, Ph.D. 950 E. 59th St. Chicago, Illinois 60637	Norms stop at 8 years of age, but students making a significant number of errors above that point can be suspected of having auditory discrimination problems. This problem would make the acquisition of phonics extremely difficult.
ZZ	Idea Power for Reading Comprehension Lee Vogel Kolzow Prentice-Hall Inc. Englewood Cliffs, N.J. 07632	A programmed workbook sutiable for grade 5-college reading levels. Teaches location of main idea, details, and paragraph organization. Gives the student a 'formula' to use in comprehending the written word.

RESOURCE G

The following resource

Techniques and Strategies for Teaching Learning Disabled Students

is taken from

"Puzzled about Educating Special Needs Students?"

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Wisconsin Vocational Studies Center
University of Wisconsin - Madison

1980

TECHNIQUES AND STRATEGIES FOR TEACHING LEARNING DISABLED STUDENTS

Reading

1. Evaluate the readability (reading level of all chapters of a text, manual, pamphlet or hand out.)

2. Have available materials at many reading levels - from elementary to college level.

3. Record lectures.

4. Have recordings of texts available. These may be obtained commercially or have students record them for extra credit.

5. Request easier-to-read materials from publishing companies.

6. Texts that are easier to read at any reading level usually have the following characteristics:

   a) Pages that have enough blank space so as not to be confusing; this is especially true when there are pictures or diagrams involved.

   b) Bold print or capital letters or different colored ink for important subject headings.

   c) Vocabulary in bold print or defined on the same page it is used in or at the end of the chapter.

   d) A glossary and index - the glossary should include a guide to pronunciation.

There are several different methods by which you can determine the readability of instructional material. Check with the special needs personnel of your school, your vocational director or your Department of Education consultant. Readability is not at all difficult to determine and will save you and your students hours of frustration and difficulty.

Readability is only one concern. Let's look now at the questions of goal setting, giving directions, presenting material, note taking, vocabulary, examinations, skill acquisition, behavior and evaluation and grading.

Goal Setting

1. Allow each student to experience success based on his or her ability and, when necessary, modification of instruction.

2. Tell students precisely what you expect them to memorize or know. Example: "You must memorize this procedure." "You don't have to memorize this; you will have the table to consult."

3. Tell them precisely what you expect them to produce.

4. See if they agree that they can meet your expectations.

5. Tell the student each day or week that separate and discrete goals are expected.

6. Set up contracts with students who are not producing.

7. Establish short and long term goals for each student, based on the student's ability and continued progress.

8. Decide whether it is memorization or understanding that is more important.

9. Emphasize quality or quantity; not both.

Giving Directions

1. Give only one or two directions at a time and check to make sure that they are understood.

2. Give very specific instructions.

3. Ask students to put your directions into their own words.

4. When there are written directions, try to make sure that each section of an exercise has its own directions; even if this means that you must duplicate them.

5. Read directions to the class.

Presenting Material

1. If you cannot read a mimeographed handout of your own, think about the student who has troubles without this added frustration.

2. Break down complex ideas and tasks into smaller component tasks.

3. When presenting material, explain a phrase or a sentence at a time, and pause. Slow down to 55 words per minute (and save!).

4. Decide what prerequisite skills students need to successfully handle the material presented. Do your students have them?

5. Write important phrases on the board as you say them. Seeing and hearing at the same time acts as a reinforcement.

Note-taking

1. Print information on one side of the board at a time---walk to the other side and continue...come back to the first side and erase. Then, start all over, This gives the student a chance to copy as much information as possible. Make sure to print. Teach your groups how to outline, scan for key information and locate answers in the material.

2. Leave blanks in a hand-out.

3. Emphasize important material in some texts with a colored "hi-lighter". Let your weaker students use the texts that you have thus outlined.

4. Use an overhead projector - keep notes.

5. Decide what material the student really must know and what material must be memorized. If a student understands a concept, he or she will retain it better than if it is simply memorized.

6. If students are required to copy outlines or long passages, either from lecture or from the board, mimeographing the material helps.

7. It may be easier for the student to memorize material if it is mimeographed than just in lecture form.

8. It is helpful for the instructor and the student to have the five or ten main points of the lesson (phrases are enough) in front of them during the class. Mimeograph and leave plenty of room between each heading for the student's notes. Instructors might ask the student to keep these in a folder or notebook. This collection of notes gives students with poor memory and poor organizational abilities something to both organize their thinking and help them remember.

9. Outline the work for the entire week, day by day, including pages to read, homework assignments, projects and so forth.

10. Demand organization from the students; folders with pockets are cheap and re-usable each term.

11. Use a student that you know is a good notetaker for getting information to one who is not. Use carbon paper, xerox, etc.

12. Tape your lecture.

13. It is often difficult for students with learning problems to generate a procedure operation on their own. It is helpful to return to basic principles which are involved in each new procedure.

14. Pictures in textbooks help the student to visualize and conceptualize. However, it may be necessary to coordinate the picture with the part of the text it represents. Color coding may be helpful in these cases.

15. It is important to associate symbols with concrete examples. Flash cards can be used with picture examples.

16. Asking students to visualize and possibly act out the steps in an operation may assist them in learning.

17. The ability to read charts and graphs may be a skill the student has never acquired. It may be necessary to teach this concept as a separate skill.

18. Reviewing daily and going back to already-learned ideas helps students with learning difficulties. It is surprising how fast students may forget what they seemed to know well.

Vocabulary

1. Define terms in words as simply as possible. If one word in a definition is not understood, the whole meaning can be lost.

2. Use operation definition. That is, "what is it used for" can be most effective. Remember to evaluate on this basis, too.

3. Deal with new vocabulary by relating it to words and terms that have already been learned.

4. Always place vocabulary in the context of a sentence or paragraph.

5. Use the words in the context of the job or other related area so that specific examples stimulate interest and motivate the student to learn and remember. Make it funny or absurd to help memorizing. Example: quenching treated steel makes it harder and "not thirsty". Draw some steel drinking.

6. Have students put new vocabulary into their own words and give examples: "Tina drew on the metal with a scriber".

7. If applicable, show the language root of the word, and divide the syllables according to pronunciation.
   Example: py rom et er - an instrument for measuring very high degrees of heat, as in a furnace or molten metal.
   "John measured the temperature of the furnace with a pyrometer."

Examinations

1. Recognition is easier than recall. Can you evaluate this way?

2. Avoid essay questions, especially when there are students in the class with difficulties in writing effectively.

3. Keep language simple and directions short. Avoid sentence structure which may be difficult to understand.

4. Keep directions short, and repeat for each section.

5. For fill-in questions, supply a word list. Students with learning difficulties often have word-remembering problems. They may know the concept and be able to recognize the word without being able to recall or spell it.

6. For multiple choice, the longer component should be on the left and the shorter on the right.

7. For worksheets dealing with essay answers, initially give page number beside questions. Gradually ease off on the numbering.

Skill Acquisition

1. Doing things in sequence is often troublesome. Breaking down the sequences into smaller groupings may help.

2. There is often difficulty in understanding basic directions such as left/right, clockwise/counter-clockwise, and turning things. It is better to use a fixed object in the room (windows, doors or other machinery) that a student can remember, rather than the designations "right" and "left". For example: "Move the wood toward the window".

3. Occasionally, a student will have a problem with the coordination of the right and left hand, two-handed tasks, or tasks involving one hand for safety while the other pushes. Hand and finger positions could be pointed out, approximated and practiced. Tactile or other clues for hand and feet placement give extra help.

Behavior

1. Tell a student when he or she does something right, even when it is a small thing.

Tips for Memorizing

1. Put into a context. Always emphasize the main point when talking about the details.

2. Repetition helps in small frequent doses. Five minutes a day will be enough for rote memorization.

3. Some pressure (for short periods of time) helps the concentration necessary for memorizing. One minute speed drills for math problems after the initial practice period drills with the student correcting his/her own answers work well.

4. A good technique for memorizing vocabulary words or spelling is to:

   a. Write the word while copying it letter by letter from a model.
   b. Count the number of letters.
   c. Write the word in syllables. Say the syllables.
   d. Cover the word and write in syllables from memory.
   e. Compare and correct.
   f. Write the word from memory.
   g. Compare and correct and start the process again if incorrect.

   This whole process takes about one minute.

5. Mnemonics are one of the best devices. They may initially take some skill and imagination on the teacher's part to make them catchy and concrete.

   a. Make up a short rhyme. For memorizing the "ight" words in English make up a rhyme (there is only a small number of them). "The knights like to fight in their bright armor. They might be on the right in light before the night.

      The students can do an even better job of making a catchy and silly rhyme.

   b. Have the student picture what they need to know. To remember the days of the week (when you need to do something or when something is due):

      Monday = "money" (a pile of coins and bills)
      Tuesday = dues day (picture our dues being paid)
      Wednesday = wed day (picture a bride)
      Thursday = thirsty
      Friday = fry day (this was easier when it was fish day. Picture fried fish)
      Saturday = sat day (the day you sit -- see yourself sitting)
      Sunday = sun day (picture a bright sun)

      Notice that this technique uses rhyming and visualization. Both of these are very useful devices.

   c. Draw a picture around a mathematical formula to cover the whole formula with a pattern so that the students do not leave any part of it out.

   d. Encourage students to fantasize and let their minds wander when they are trying to remember. What does the material remind them of? A device that they come up with will be long remembered. It works better if it's suggestive or silly. In carpentry, the student will remember the flashing, hips or underlayment better if they see the term visually with its suggestive meaning. It's important to picture the term in its real meaning with the memory device attached or superimposed.

   e. Rhyming words can increase in value if they are additionally connected to the words or idea you are trying to memorize. Using the word "statute" is increased if you also note that a "statute" tends to be permanent and fixed like a "statue". (For this one, the Statue of Liberty works well because it's familiar).

f. Repeat words or directions to memorize on cassette tape. Have students play during class period while doing other tasks.

Organizing and Structuring

1. Each student should have loose leaf paper of different colors or a spiral bound notebook for each class.

2. Folder with pocket in it to hold papers from each class. (A brand name is "Duo-Tang") This can be hole punched to fit in notebook.

3. A paper calendar for the loose leaf notebook of approximately the same size as the notebook. (Banks are a good place to obtain multiple copies) Place at front of notebook.

4. A plastic pouch of pens and pencils (always have two with you) that has holes to match notebook ring binders.

5. A code reminder to indicate when an assignment is due and another for a week before it's due.

Procedural Organization

1. When giving an assignment have the class mark their calendars immediately. To reinforce its use, have them refer to it daily.

2. Set time and quantity goals for each student and grade all aspects of the assignment, quality, time usage, and quantity.

3. Contract for behavior changes and have the contract go in the notebook.

4. Assign grades via xerox checks so that students have a sense of the "real world", and have a chance to use reading and math skills. Have them keep an "account".

Adapted from Otazo, Karen. Methods the vocational or mainstreamed teacher can use to help the disabled student succeed CANHO-GRAM. Sacramento, California, California Association for Neurologically Handicapped Children. July-August, 1979.

RESOURCE H

The following resource

Instructing Learning Disabled Students

is taken from

"Puzzled about Educating Special Needs Students?"

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Wisconsin Vocational Studies Center
University of Wisconsin - Madison

1980

INSTRUCTING LEARNING DISABLED STUDENTS

Where To Start

Instructing learning disabled students is a challenge and requires extra time. The cooperation of others in the school and community will enhance the learning process of the learning disabled students. Teacher inservice or formal classes on compensating for the learning disability enable teachers to acquire needed information and materials.

Vocational classrooms and laboratories provide good learning environments. Techniques for teaching the learning disabled students are provided on the following pages. Imagination and ingenuity will enhance these techniques and help provide better instruction and results.

The learning disabled student's image of the vocational teacher is important. Vocational teachers should be genuinely interested in the welfare of the student. The most effective teacher really cares. It shows as the teacher emanates love and believes that the learning disabled student can learn.

The cooperation of those working directly with teachers and students is helpful. This includes special need coordinators, tutors, support teachers, resource staff and special education teachers.

Strategies For Modifying Teaching Techniques And Materials

Specific modifications can be made in teaching techniques and materials to help the learning disabled student succeed in the regular classroom and shop. Details of some of these modifications are found on the following pages.

Listening Aids

Learning disabled students may need help in learning how to listen. The ability to listen can be strengthened and reinforced through the use of appropriate techniques. Help the student to listen to lectures and demonstrations. Explain the meaning of any gestures, hand waving, motions or facial expressions which are used. Let the students know the meaning of a raised or lowered voice, or pauses in the delivery. Be aware that learning disabled students may not be correctly interpreting gestures or body movements. Be aware of words that may have double meanings such as hear and here, or their and there.

Help the student to listen for key points and to separate details from major points. Organize presentations so that major points are emphasized and so that students can take notes in a logical sequence. Notes should be reviewed after class and compared with the textbook or other materials.

Help the student to develop visual images of main points. For example, in preparing a car fender for painting, the steps may be to remove the old paint, clean the fender, apply primer, apply finish paint, and buff the paint. To help the student remember the five major points, develop an associate device in rhyming words such as in below.

Rhyming Word Associations

one - sun	six - sticks
two - shoe	seven - heaven
three - tree	eight - gate
four - door	nine - vine
five - hive	ten - pen

To apply the rhyming words ask the student to imagine the old faded and scratched fender, sitting in the sun, imagine a clean, smooth fender sitting in a shoe and a can of primer hanging in a tree. The shiny new fender could be caught in the door and the paint buffer could be attached to a bee hive.

Another method might be to use the first letter of each task for a word or series of letters to help in the recall process. In this case the letter would be RCPPB which would stand for Remove, Clean, Prime, Paint, Buff.

Students should be encouraged to ask questions or to ask the teacher to repeat statements that are not understood. Teachers should also supply a glossary of new words to be learned, preferably before the class in which they will be used. It will then be much easier to understand. Teachers should also supply a glossary of new words to be learned, preferably before the class in which they will be used. It will then be much easier to understand the concepts if the words are already familiar.

At the end of a lecture, demonstration or talk, review the major points and encourage students to ask questions. Students should be tuned in to the teacher's way of speaking and transferring information through the spoken word.

Reading Aids

Reading is a required skill in most courses. However, keep in mind that the severely learning disabled students will read not at all, or at the first and second grade level. The more moderately learning disabled students can benefit by having vocational teachers reinforce reading skills.

A learning disabled student's specific reading disabilities may need to be diagnosed by a reading specialist. The student may then be enrolled in a supplementary reading program which is taught simultaneously with the vocational course or courses. The poor reader will have weak comprehension, poor expression, may use lip movements and do word-by-word reading.

Vocational teachers can capitalize on the existing ability to read. It is important to develop a method to identify and pronounce new words. A list of new words, along with the appropriate definitions, will help. These lists can be supplied, as needed, during the progress of the course. Help the student recognize key sentences and key words. Learning disabled students need help in using their ability to read and study. Most learning disabled students do not take good notes. Spend time showing them how to take notes on class materials and provide examples early in the course. The students should develop note-taking formats that are useful to their needs.

Cooperate with the reading specialist to help the learning disabled student read the required materials. Let the student know that you are willing to work with him or her in improving reading skills.

The lack of reading ability does not necessarily mean that the student cannot remain in the vocational course. Key points contained in written material can be communicated to the student in other ways. Audio tapes, demonstrations or verbal explanations can provide the same information. Utilize existing reading ability but do not rely on that alone.

Thinking Aids

Learning disabled students may be easily distracted and may not pay attention in class. They will have trouble in maintaining a train of thought and show much difficulty in making a choice. They may pay little attention to important points and not be able to answer simple questions about the skill being taught. The following suggestions may help a learning disabled student to organize his or her thoughts:

1. Ask students to describe a task they have learned and to explain the operation. An example might be how to type a business letter.

2. Ask the learning disabled student to watch another student complete a task, then tell what happened. For example, have the student tell how to install a new water pump.

3. Give the learning disabled student a disassembled machine or tool and ask the student to assemble it.

4. Ask the student to explain why a piece of equipment works or how to adjust a piece of equipment. For example, explain how to set up a lathe.

5. Give the student a chance to troubleshoot a machine. Set up a car that will not start and let the student find out why.

6. Conduct brainstorming sessions to find solutions to a problem.

7. Teach the learning disabled student to organize his or her notes.

8. Have the student plan a major event and organize activities for the event. For instance, plan a chili supper or a class party or set up an assembly line to produce a product.

9. Have the student plan a field trip. Give him or her the destination and let him or her plan the time of departure, several stops, and return time.

10. Have the student set up an evaluation for the product produced in the laboratory. Have the student decide what would be an acceptable product and why.

Speaking Aids

Learning disabled students need to learn to express themselves if they are going to be able to communicate with fellow students, teachers and employers. Although the vocational teacher is not expected to be a speech teacher, some things can be done to help the learning disabled student improve his or her speaking ability while taking vocational courses.

1. Be sure the student is enrolled in a supplementary speech class, reading lab or remedial reading courses.

2. Make a glossary of the key words relating to specific vocational skills. Provide a picture of the process or item to help the learning disabled student pronounce and learn the word.

3. Encourage the student to demonstrate a skill and tell other classmates how to do tasks.

4. Encourage students to think through what they are going to say, before speaking.

5. Provide students who are hyperactive talkers with a separate place to study. Arrange for them to listen to tapes. Remove them from a situation where they disrupt other students and themselves.

6. Provide or recognize opportunities to build self-confidence and give praise.

Math Aids

Mathematic skills are required in many vocational courses and are necessary in everyday living. The most commonly needed skills in vocational courses are measurement, simple addition, subtraction and multiplication. Reading and conceptualization may interfere in solving basic math problems. Try the following ideas to help math students:

1. Encourage students to learn the basic units of standard and metric measures. Rulers and other measuring instruments should be available to give students as much hands-on information as possible.

2. Allow the use of calculators, when and where possible, to help students solve problems and eliminate errors caused by math processes.

3. Use visuals, tactile materials, and demonstrations to solve vocational math problems.

4. Work with special education and math teachers to help learning disabled students obtain and use important math skills. Let the math teacher know what kinds of skills are needed and get a learning disabilities specialist to help teach these skills.

Writing Aids

The learning disabled student will write slowly with numerous errors in spelling and mechanics. Organization will be poor. The student will be reluctant to do written work. Written assignments may come in late, if at all. Lack of writing ability and lack of confidence discourage the student from trying, and limit productivity.

The following ideas may be tried to help the learning disabled student succeed:

1. Encourage the student to write out ideas to the best of his or her ability, preferably in a sequenced outline form. Do not overemphasize spelling or mechanics.

2. Encourage students to draw simple pictures or diagrams where possible.

3. Be sure to keep samples of the student's successful work outlines or diagrams. This will show the student that he or she is progressing.

4. If a student is reluctant to do outlines or diagrams, ask the student to express ideas orally. Then outline ideas as the student talks, showing how his or her ideas would appear in writing.

5. Allow the learning disabled student to acquire copies of classmates' notes to see the important points.

6. Use a tape recorder to record class lectures or demonstrations and allow students to borrow the tapes for home or out-of-class listening.

7. Give oral exams if necessary.

8. Provide students with notetaking skills, such as taking down key words or concepts and organizing notes on the paper.

Where Is The Open Road To Learning?

Although the techniques to improve listening, reading, writing, mathematics, speaking and thinking, will help the student learn, vocational teachers must teach to specific learning abilities. Teachers need to know if the student learns best by the auditory, visual or tactile modes. Special education instructors, school counselors or the student's teachers should be able to identify the most successful learning mode of the student. If not, vocational teachers may need to identify the learning mode themselves.

I may be sufficient to ask the student how he or she learns best. Compare the student's reaction to a set of written instructions with the student's reaction to the same instructions on tape. This may give a clue. Demonstrating the same instructions in the laboratory may also yield a clue. An informal test may help a teacher to decide which learning mode is best for a student. Fill in the answers while observing the student. More formal tests are available from school psychologists.

Once the teacher has identified the student's learning mode, he or she can proceed to develop appropriate teaching techniques. Ideal teaching would include auditory, visual and tactile teaching approaches. Such an approach would help the regular vocational student as well as the learning disabled student. Nearly every person, whether handicapped or not, has a preferential learning mode.

Be Creative

Learning disabled students may be highly creative but may not demonstrate creativity because of frustration in the educational system. It is up to the teacher to bring out this creativity. The best way is to be creative in teaching and in helping the student to do his or her best. Teaching in the auditory, visual and tactile modes challenges a teacher's creativity. Teachers should not be afraid to try different and varied teaching techniques.

Teaching an Auditory Learner

Auditory learners need special emphasis on the hearing mode of learning. This means that special attention should be paid to oral presentations in the classroom and laboratory. Specific teaching techniques to help students to listen should be developed. Speak slowly and clearly. Asking students to pay special attention to lip movements will help. Be sure that the student is seated with a clear view of the speaker. Some students may learn best by closing their eyes and listening.

Vocabulary is consistently being expanded in vocational classrooms. Carefully pronounce new words and have the student to review material. Encourage students to take notes and then check the notes to see if material is recorded correctly.

Read aloud while students follow along. This is especially helpful when giving directions for taking a test or for performing shop tasks. Oral tests and oral feedback will help reinforce learning. If oral directions are not also in writing, have the student write them down. Ask the student to repeat the directions or read back what he or she has written.

Directions may need to be repeated. It may also be necessary to allow more time for the student to respond to questions.

Use cues to alert the listener to important points when outlining material verbally. For example, the three major systems on the motor are: fuel, electrical, and cooling. Or the most important factors in corn yield are: water, light, and fertilizer.

Encourage auditory learners to repeat important points quietly to themselves and ask them to try and hear the words or major points.

Pictures, charts or lists of items can be used to teach visual learners if the content is verbalized. Explain the picture or chart slowly and in specific detail. Allow time for questions and ask the student to tell what is on the chart.

Another good teaching technique for auditory learners is role-playing. Set up realistic role-playing scenes in the shop or classroom. Let the auditory learners give a sales demonstration on the features of a new table saw and let other class members ask questions. Ask the auditory learner to demonstrate shop tasks to others and tell them how to perform the task. Let this student teach simple tasks to others. Encourage auditory learners to talk about their work with others.

Remember that auditory learners learn best by listening, and will retain information longer and more completely when the information is heard. Develop vocational instruction that includes the delivery of classroom shop information in the auditory mode. This will benefit students who learn mainly by hearing and will enhance the quality of teaching.

Teaching in the Visual Mode

Teaching students to concentrate on visual modes of learning is the key to helping the visual learner. This means finding ways to turn the spoken word into pictures, and using visual instruction techniques. Help the student to see the item of discussion, such as the metal lathe, the drill bit or the setting on the micrometer. If reading is involved, encourage the student to practice the look-say method. The visual learner will not benefit from sounding out words. If math problems are involved, make flash cards of problems, formulas or equation. Show each step on a separate card. Help the student to visualize story problems.

Encourage the student to underline key points when reading. Underlining with colored pencils will often help. Students should use wide lined paper for note-taking. They should be taught a note-taking format that clearly separates the concepts on each page. This technique will be worth the additional paper it will take. Suggest that the visual learner make a practice of writing notes to himself or herself and always carry a writing pad or 3x5 cards to use to record material for memorization or future recall.

Acronyms can also be used for the visual learner. Instead of saying the acronyms, as an auditory learner would do, the visual learner should try to visualize the words in his or her mind.

Teaching techniques should include a variety of visual aids. Draw and write on the blackboard. Use overhead projectors, preferably with colored overlays, graphs, diagrams or maps that are highly visual. Movies, filmstrips and videotapes are appropriate. Encourage the visual learner to use drawings, maps and graphs to complete assignments and to present his or her ideas to you.

Tactile Learners

Tactile learners will learn best by doing. Provide hands-on activities in the classroom and laboratory. Arrange for the tactile learner to get involved in hands-on experiences. Utilize accessible equipment such as tape recorders, calculators, typewriters and audio visual equipment in the classroom. In the shop or laboratory, the scope to the tactile learners experience is limited only by the imagination and ingenuity of the vocational teacher.

The student should begin using available tools and equipment as soon as possible. When studying auto mechanics, get the student involved in the assembly and disassembly of specific automotive parts such as the carburetor, or alternator. In a wood or metals shop, get the student involved in a project to construct or design items. Provide field trips to show the student where laboratory skills are used on the job.

Provide work experience or simulated work experience. Whenever possible, arrange a learning situation that involves activity. When conducting classes, bring the items under discussion to class and let the tactile learner feel or touch them.

When possible, let the students build models or replicas. Constructing model homes to scale would allow the tactile learners to acquire knowledge of acceptable building design and practices. Electrical wiring, plumbing and heating techniques can all be acquired by building models.

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Practical English Grammar; Creative Visuals; Division of Gamco Industries; Box 1911; Big Springs, Texas

Programmed Reading for Adults; McGraw-Hill; 1221 Avenue of the Americas; New York, NY 10020

Reading Attainment System 2: Educational Design; Grolier Educational Corp.; 845 Third Avenue; New York, NY 10022

Specific Skills Series; Barnell-Loft; 958 Church Street; Baldwin, NY 11510

SRA College Reading Program; Science Research Associates; P.O. Box 4924; Chicago, ILL. 60680

Success in Language; Follett Publishing

Survival Vocabulary Sets; Janus Book Publishers

Webster Classroom Reading Clinic; McGraw-Hill

Mathematics

Algebra; Educulture; 1 Dubuque Plaza; Dubuque, IA

Arithmetic; Educulture; 1 Dubuque Plaza; Dubuque, IA

Arithmetic Skill Text for Daily Living; Special Service Supply; Box 705 Huntington, New Jersey 11743

Basic Applied Mathematics; Educulture; 1 Dubuque Plaza; Dubuque, IA

Basic Mathematics: Set II; Harcourt, Brace-Jovanovich

Clues to Math; Education Progress Corporation; Box 68502; Tulsa, Okla. 74145

Computates 7; Science Research Associates, Inc.; 259 East Erie St.; Chicago, ILL 50511

Consumer Math Series; BRL; Ladera Professional Center; Box 577; Palo Alto, CA

Educational Development Lab; McGraw-Hill

Explora Tapes; International Teaching Tapes

Foundation Mathematics; McGraw Hill, Webster Division; 1221 Avenue of the Americas; New York, NY 10020

Math Achievers; Appleton-Contury-Corfts

Mathematic Drill Tapes; International Teaching Tapes

Mathematics for the Consumer; South-Western Publishing Co.

Merrill Mathematics Skill Tapes; Charles E. Merrill; 1300 Alum Creek Drive; Columbus, Ohio 43216

Money Matter Guides; Janus Book Publishers; 2501 Industrial Parkway West; Hayward, CA 94545

Pacemaker Arithmetic Porgram; Fearon Publishing, Inc.; Pitman Publishing Corp.; Belmont, CA

Pre-Algebra; Educulture; 1 Dubuque Plaza; Dubuque, IA

Refresher Mathematics; Allyn & Bacon; Alantic Ave.; Boston, Mass. 02210

Special Ed Programmed Arithmetic Lab; Mafex Associates; 90 Cherry Street; P.O. Box 519; Johnstown, Penn. 15902

Target Vocational Math; Opportunities for Learning, Inc.; 8950 Lurline Ave.; Chatsworth, CA 91311

Useful Arithmetic: Volumes I and II; Frank E. Richards Publishing Co., Inc.; P.O. Box 66; Phoenix, NY 13135

Using Dollars and Sense; Fearon Publishers, Inc., Belmont, California

Spelling

Demon Spelling words; Educational Activities; 1937 Grand Ave.; Baldwin, NY 11510

Linguistic and Functional Spelling Strategies; by Toni K Shinn; in A Handbook of Diagnostic and Prescriptive Teaching; Sabatin & Mann; An Aspen Publication; Rockville, Maryland

The Mechanics of Spelling; Educulture Inc. 1 Dubuque Plaza; Dubuque, IA

6 Minutes a Day to Perfect Spelling; by Harry Schefter; Washington Square Press, Inc. New York, NY

New Webster's Dictionary - Vest Pocket Edition; Delair Publishing Company; 420 Lexington Ave.; New York, NY 10017

Spelling Dictionary; Lyons and Carnahan; Chicago, ILL

Spellex - Word Finder; Curriculum Associates; 5 Esquire Rd; North Billerica, MA

20,000 Words; Gregg Publishing; Division McGraw-Hill Inc, New York, NY

Writing

Classification and Organization Skills; Curriculum Associates; 5 Esquire Road; North Billerica, MA

Lessons for Better Writing; Curriculum Associates; 5 Esquire Road; North Billerica, MA

Life Skills Writing; Opportunities for Learning Inc.; 8950 Lurline Ave.; Dept. 46D; Chatsworth, CA 91311

New Links to Cursive; Curriculum Associates

Outline Building; Curriculum Assocates

Personalized Approach to Teaching Written Language Skills; by Toni K Shinn, in A Handbook of Diagnostic and Prescriptive Teaching; Sabatino & Mann, An Aspen Publication; Rockville, Maryland

Report Writing Skills; Cornet Instructional Media; 65 South Water Street; Chicago, ILL. 60601

Rhetoric and Critical Thinking; Educulture Inc. 1 Dubuque Plaza; Dubuque, IA

Turabian, K.; Student's Guide for Writing College Papers; Chicago; University of Chicago Press

Computer Based Instruction

Avante Garde, P.O. Box 30161, Eugene, OR 97403 — MATH

Logic And Euclidean Geometry
Special Products and Algebraic Factors
Introductory Algebra

Edu Ware, P.O. Box 22222, Agoura, CA 91301 — MATH

Algebra 1-5
Compu-Math/Arithmetic Skills
Fractions/Decimals
Statistics

Microcomputer Workshop, 225 Westchester Avenue, Port Chester, N.Y. — MATH

High School Math Competency Series
Binomial Multiplication - Grades 8 - 11
Factoring Algebraic Expressions - Grades 9 - 12
Equations - Grades 7 - 11
Coordinates - Grades 7-II

Milton-Bradley Co., Shaker Rd., E. Longmeadow, Ma — MATH

Percents
Division Skills
Ratios and Proportions
Mixed Numbers
Decimal Skills

Edu Ware — LANGUAGE

PSAT and SAT Word Attack Skills
PSAT/SAT Analogies
Compu-Spell
Compu-Read

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Dr. Jekyl and Mr. Hyde
Atlantis - Where are You?
A Dying Man's Confessions
UFO - Are we Being Watched?
The Big Horn Medicine Wheel
The Mysterious Pyramid
Lizzie Borden
The Black Cat
Easter Island
Vampires and Dracula
The Bermuda Triangle
Bluebeard Murders

Broderbund Software, 1938 Fourth St., San Rafael, CA 94901 — LANGUAGE

Bank Street Writer
Spelling Checker

Harcourt Brace Jovanovich, 1250 Sixth Ave., San Diego, CA 92101 — TESTS

Computer SAT Preparation
Computer ACT Preparation
GED Preparation

Study Skills

Adademic Skills; Educulture Inc., 1 Dubuque Plaza, Dubuque, IA

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